Population Survey of the Oyster *Crassostrea virginica* in the Dunk River Estuary, Prince Edward Island, 1976

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POPULATION SURVEY OF THE OYSTER *CRASSOSTREA VIRGINICA* IN THE DUNK RIVER ESTUARY, PRINCE EDWARD ISLAND, 1976

by

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ABSTRACT

Hawkins, C.M. and T.W. Rowell. 1985. Population survey of the oyster Crassostrea virginica in the Dunk River Estuary, Prince Edward Island, 1976. Can. MS Rep. Fish. Aquat. Sci. 1862: iv + 74 p.

This report is the sixth in a series of seven which examine temporal changes in the oyster population of the Dunk River, Prince Edward Island. The report tabularizes and graphically presents information on the distribution, abundance, size, and age composition of oysters collected in 1976. Oyster density over the survey area ranged from 0-395 m^{-2}. Sixty-one percent of the sample stations yielded oysters, 4+ yr old oysters representing 30.4% of the population being most abundant. One, 2, and 3 yr old oysters accounted for 22.4%, 22.0%, and 25.1% of the sample population respectively. Size frequency histograms for individual stations indicated that spatfall settlement and survival appeared regular in most areas examined.

RÉSUMÉ

Hawkins, C.M. and T.W. Rowell. 1985. Population survey of the oyster Crassostrea virginica in the Dunk River Estuary, Prince Edward Island, 1976. Can. MS Rep. Fish. Aquat. Sci. 1862: iv + 74 p.

Le présent document est le sixième d'une série de sept rapports portant sur les changements temporels qui touchent la population d'huîtres de la rivière Dunk, Ile-du-Prince-Edouard. Le rapport présente des renseignements sous forme de tableaux et de graphiques concernant la distribution, l'abondance, la taille et l'âge des huîtres capturées en 1976. La densité des huîtres dans la zone étudiée a varié entre 0 et 395 par m^2. Des huîtres ont été capturées dans 61% des stations d'échantillonnage. Les huîtres de 4 ans et plus étaient les plus abondantes et représentaient 30,4% de la population. Les huîtres de un, deux et trois ans représentaient respectivement 22,4%, 22,0% et 25,1% de la population échantillonnée. Les histogrammes de fréquences de la taille dans les différentes stations indiquent que la fixation des larves sur un support et la survie ont semblé régulières dans la plupart des zones étudiées.

INTRODUCTION

This report is the sixth in a series of seven which examine the population structure of the oyster, Crassostrea virginica, in the Dunk River Estuary, Prince Edward Island. The long-term monitoring program, which began in August 1969, was designed to yield detailed information on the distribution, abundance, and size composition of oysters in the Estuary. The following summarizes data collected during August 1976.

MATERIALS AND METHODS

A description of the study site, sampling procedure, and methods of data acquisition has been previously presented by Hawkins and Rowell (1985a). The information presented in this report was collected during August 3-5, 1976. Where samples were less than the 1 m^2 specified in the sampling protocol, the data have been adjusted in order to facilitate comparison among other reports in the series. The locations of the 12 transects and the 92 sampling stations are shown in Figure 1.

RESULTS AND DISCUSSION

Table 1 lists the transects and sampling stations with information on oyster density per square meter, size range, mean size (in centimeters), standard deviation, and weight (in kilograms) of live oysters collected. Figure 2 shows the distribution of loose shell material collected at each station. Wet weight of shell ranged from 0-9.35 kg m^{-2}. In 35.9% of the stations examined this material exceeded 2.0 kg. In the previous year (1975) (Hawkins and Rowell 1985e) 21.0% of stations had densities of loose shell material exceeding 2.0 kg.

Oyster density per square meter at each station is shown in Figure 3. Density ranged from 0-394, with a size range of 0.5-6.0 cm. Twenty-nine percent of the stations examined yielded no live oysters.

Following the oyster density classification proposed by Lavoie (1977), the oyster population in the Dunk River had 41.3% of the 92 stations with low densities (≤10 m^{-2}), 25.0% with intermediate densities (11-100 m^{-2}), and 33.7% with high densities (>100 m^{-2}). When compared to the previous year (1975) (Hawkins and Rowell 1985e), the percentage of stations with intermediate densities remained similar (28.7% in 1975); and the percentage of high-density stations has almost doubled (18.6% in 1975). Lavoie (1977) indicated that areas of intermediate oyster density are preferred by fishermen, since they yield good-quality oysters while requiring little culling effort. While this consideration may be significant in a market-direct fishery, it does not apply to the same degree in the relay fishery, such as that in the Dunk River where the cull size is smaller. Density information based on size (length) and age is more useful in determining oyster availability to the fishery and in following recruitment patterns.

Figures 4a, b, c, and d show the density per square meter of ages 1, 2, 3, and 4+ yr old oysters at each sampling station. Ages were approximated from the growth equation determined for Dunk River oysters by Lavoie and

Bryan (1981). Figures 5a, b, c, and d show the same data but express the density for each age as a percentage of all oysters collected at the sampling station. Approximately 38% (3,061 individuals) were equal to or greater than 2.5 inches (6.5 cm), the cull size for the relay fishery, while about 18% (1,436 individuals) were equal to or greater than the minimum legal market size of 3 inches (7.6 cm).

Figure 5c shows that 3 yr old oysters (4.5-6.5 cm) comprise over 25% of the oysters collected in 34.8% (32 of 92 stations) of the total number of stations examined. Figure 5d indicates that 4+ yr old oysters (>6.4 cm) account for greater than 25% of the oysters collected at 46.8% of the stations occupied. Other ages were less abundant and did not predominate in as large a percentage of the stations examined.

Size frequency histograms also were constructed for each of the sampling stations with more than 10 individuals m^{-2} (Fig. 6). Lower densities were not considered representative of populations within a 1 m^2 quadrat. Size frequency distributions for all stations were relatively similar. In other years (Hawkins and Rowell 1985a, b, c, d, e, and f) frequency distributions for individual stations located in the two principal fishing areas differed from those in the remainder of the survey area in that they indicated more consistent spat settlement and (or) survival from year to year.

Examination of Figure 7, a composite size frequency distribution constructed from all data, provides a means of comparing the 1976 population size structure with those observed in other years (Hawkins and Rowell 1985a, b, c, d, e, and f). The shape of the 1976 frequency distriubtion is bimodal. Each mode appears to be a blend, in almost equal proportions, of two age classes. The first mode is comprised of 1 and 2 yr old oysters which together account for 44.4% of the total sample population. The second mode is comprised of 3 and 4+ yr olds which together account for 55.3% of the sampled population. In the previous year (1975) (Hawkins and Rowell 1985e), 1 yr old oysters accounted for 36.6% of the sampled population and 2 yr olds 30.3%. Three and 4+ yr olds represented 23.1% and 16.0% respectively. In addition the magnitude of the frequency peak values calculated for each mode in the 1976 population frequency distribution is among the highest when compared to other years (Hawkins and Rowell 1985a, b, c, d, e, and f).

The Appendix lists the composition by weight of material collected at each station. In general, live oysters and other shell comprised the greatest proportion by weight in all samples.

SUMMARY

1. Weight of oyster shell collected at each station ranged from 0-9.4 kg. In 35.9% of all stations examined shell material exceeded 2.0 kg.

2. Wet weight of shell and live oysters comprised the major proportion of the total sample weight at each station.

3. Oyster density ranged from 0-395 individuals m^{-2} over all stations, 41.3% of the stations having low densities ($\leq 10\ m^{-2}$), 25.0% having intermediate densities (11-100 m^{-2}), and 33.7% having high densities ($>100\ m^{-2}$).

4. Size frequency distributions in 1976 indicated that spatfall settlement and recruitment survival appeared regular within the areas surveyed.

5. A size frequency distribution for all 1976 data indicated that 1 and 2 yr old oysters together account for 44.4% of the sampled population and 3 and 4+ yr old oysters together comprised 55.2% of the population.

6. The percentage representation of 1 and 2 yr old oysters suggests good spatfall settlement and survival of the 1975 and 1974 year classes respectively.

7. The moderately high percentage of 3 yr olds confirms the very good spatfall and survival of the 1973 year class, and the higher percentage of 4+ yr olds further confirms the success of the 1972 year class and the apparently poor sampling of this year class in the 1973 survey.

ACKNOWLEDGEMENTS

We wish to thank R.E. Lavoie for planning and implementing the survey and C.F. Bryan for his assistance in collection and processing field samples. B. Mullen and D. Whillans assisted in data processing and graphic presentation.

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Table 1. Density per square meter, range of 0.5 cm size classes, mean size (in centimeters), standard deviation, and fresh weight (in kilograms) of oysters collected at each station in 1976.

Transect line	Station number	Number m^{-2}	Range of 0.5 cm size classes	Mean size (cm)	Standard deviation	Oyster weight (kg m^{-2})
A	1	0				
	2	17	1.5-13.0	6.97	3.51	0.41
	3	134	0.5-13.0	4.87	2.52	1.99
	4	1	8.5- 9.0	9.0		0.06
	5	0				
	6	0				
B	7					
	8	0				
	9	8	1.0- 8.5	3.94	2.15	0.12
	10	55	0.5- 8.0	4.62	1.84	0.66
	11	246	0.5-11.0	5.45	2.87	2.71
	12	0				
C	13	180	0.5-17.5	5.48	3.72	2.42
	14	11	0.5-10.0	5.27	3.89	0.33
	15	31	1.0-10.0	3.74	2.02	0.33
	16	4	2.5-10.0	6.25	2.99	0.15
	17	0				
	18	0				
D	19	0				
	20	0				
	21	1	7.0- 7.5	7.5		0.04
	22	0				
	23	10	1.5-11.0	5.40	2.69	N/A
	24	26	1.0-10.5	5.96	2.49	0.65
	25	0				
	26	0				
E	27	67	0.5-13.0	6.34	3.80	1.21
	28	72	1.0-12.0	6.10	3.91	1.41
	29	76	1.0-10.5	5.21	2.54	1.44
	30	4	3.0-10.0	7.25	2.90	0.18
	31	0				

...Cont'd.

Table 1. Cont'd.

Transect line	Station number	Number m^{-2}	Range of 0.5 cm size classes	Mean size (cm)	Standard deviation	Oyster weight (kg m^{-2})
	32	0				
F	33	0				
	34	0				
	35	0				
	36	170	1.0-11.0	5.04	2.12	2.84
	37	160	0.5-10.5	5.23	2.25	4.01
	38	80	1.0-12.5	5.35	3.25	0.94
	39	0				
	40	134	1.0-16.0	6.81	3.59	2.09
G	41	270	0.5-11.5	4.89	2.74	3.84
	42	0				
	43	82	1.0-12.5	5.63	2.49	1.46
	44	394	0.5-11.5	4.71	2.52	4.50
	45	85	1.0- 8.5	4.74	2.09	1.46
	46	1	6.0- 6.5	6.5		0.03
	47	0				
H	48	0				
	49	1	8.5- 9.0	9.0		0.06
	50	70	1.0-10.0	5.34	2.17	1.23
	51	62	1.0- 9.5	5.81	1.85	1.32
	52	150	0.5-10.5	5.34	2.13	2.49
	53	148	0.5-10.0	5.08	2.35	2.81
	54	160	1.5- 8.5	4.94	2.18	2.54
	55	0				
	56	2	1.5- 6.5	4.25	3.18	N/A
I	57	1	5.5- 6.0	6.0		0.02
	58	0				
	59	202	0.0-11.0	5.51	2.57	3.60
	60	106	0.0-14.0	4.57	2.92	1.58

...Cont'd.

Table 1. Cont'd.

Transect line	Station number	Number m^{-2}	Range of 0.5 cm size classes	Mean size (cm)	Standard deviation	Oyster weight (kg m^{-2})
	61	56	0.5-13.5	4.48	2.88	0.79
	62	294	0.0-10.0	4.66	2.19	4.84
	63	372	0.0-11.0	4.39	2.44	6.50
	64	90	0.0-10.0	5.16	2.49	2.18
	65	2	6.0-10.0	8.25	2.47	0.12
	66	0				
J	67	0				
	68	256	0.5-12.0	5.31	2.58	5.74
	69	230	0.5-11.0	5.02	2.40	4.67
	70	520	0.0-13.0	4.91	3.10	7.71
	71	288	0.0-11.0	4.84	2.63	4.32
	72	312	0.0- 9.5	4.62	2.56	5.28
	73	268	0.0-12.0	5.35	3.42	8.08
	74	344	0.0-10.5	5.61	2.48	8.36
	75	38	1.0- 8.5	5.54	1.87	1.51
	76	34	0.5-10.5	5.19	2.49	0.76
K	77	53	1.0-11.5	5.53	2.24	1.35
	78	208	0.5-10.0	5.03	2.36	4.21
	79	102	0.5- 8.5	4.41	2.09	1.84
	80	240	0.5-12.5	6.13	2.81	6.26
	81	280	0.5-12.0	6.35	2.59	7.13
	82	252	1.5-11.0	6.05	2.30	6.28
	83	69	1.5-11.0	5.82	2.33	1.78
	84	0				
L	85	30	1.5-10.0	5.92	2.48	0.81
	86	5	5.0- 7.5	6.50	0.94	0.14
	87	72	1.5- 8.5	6.08	1.89	1.83
	88	30	0.5-10.5	5.55	2.24	0.67
	89	180	1.0-12.5	6.73	3.03	2.25
	90	108	1.0- 8.5	5.83	1.93	2.67
	91	63	1.0-10.0	5.64	1.74	1.62
	92	144	1.0- 7.5	5.13	1.66	2.84

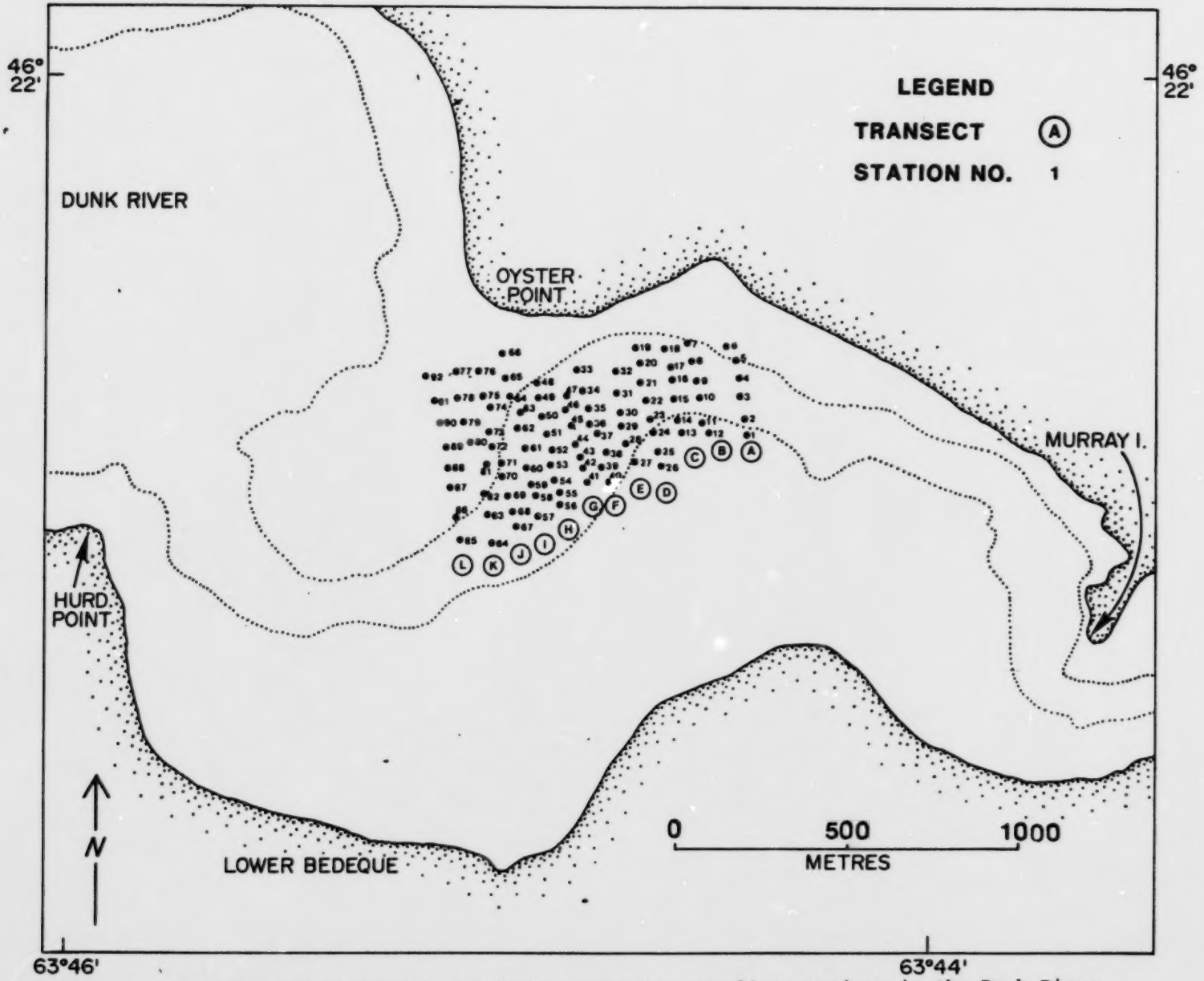


Figure 1. Positions of transects and their respective sampling stations in the Dunk River Estuary, 1976.

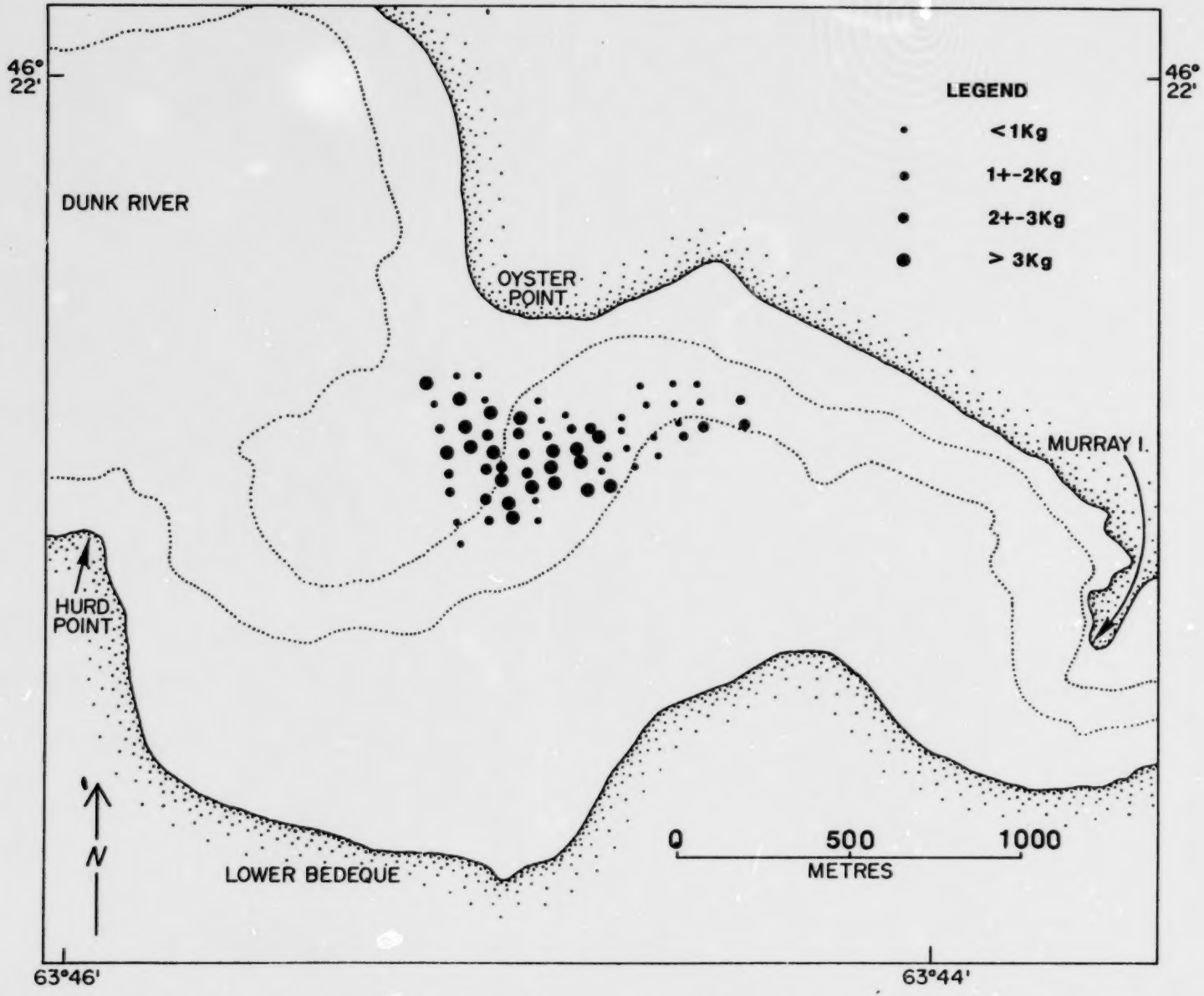


Figure 2. Weight of shell (excluding oyster shell) collected at each station in 1976.

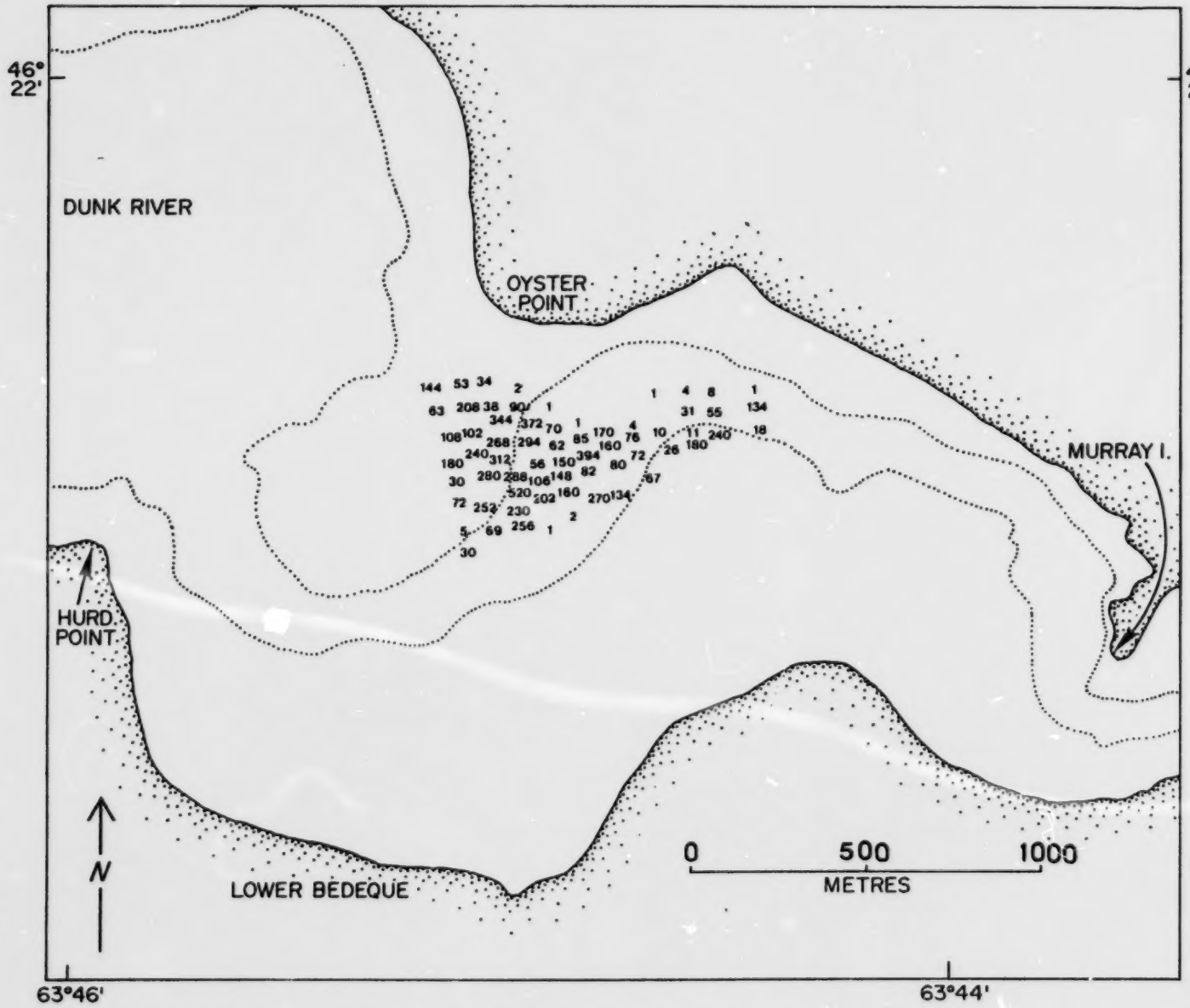


Figure 3. Number of oysters per square metre.

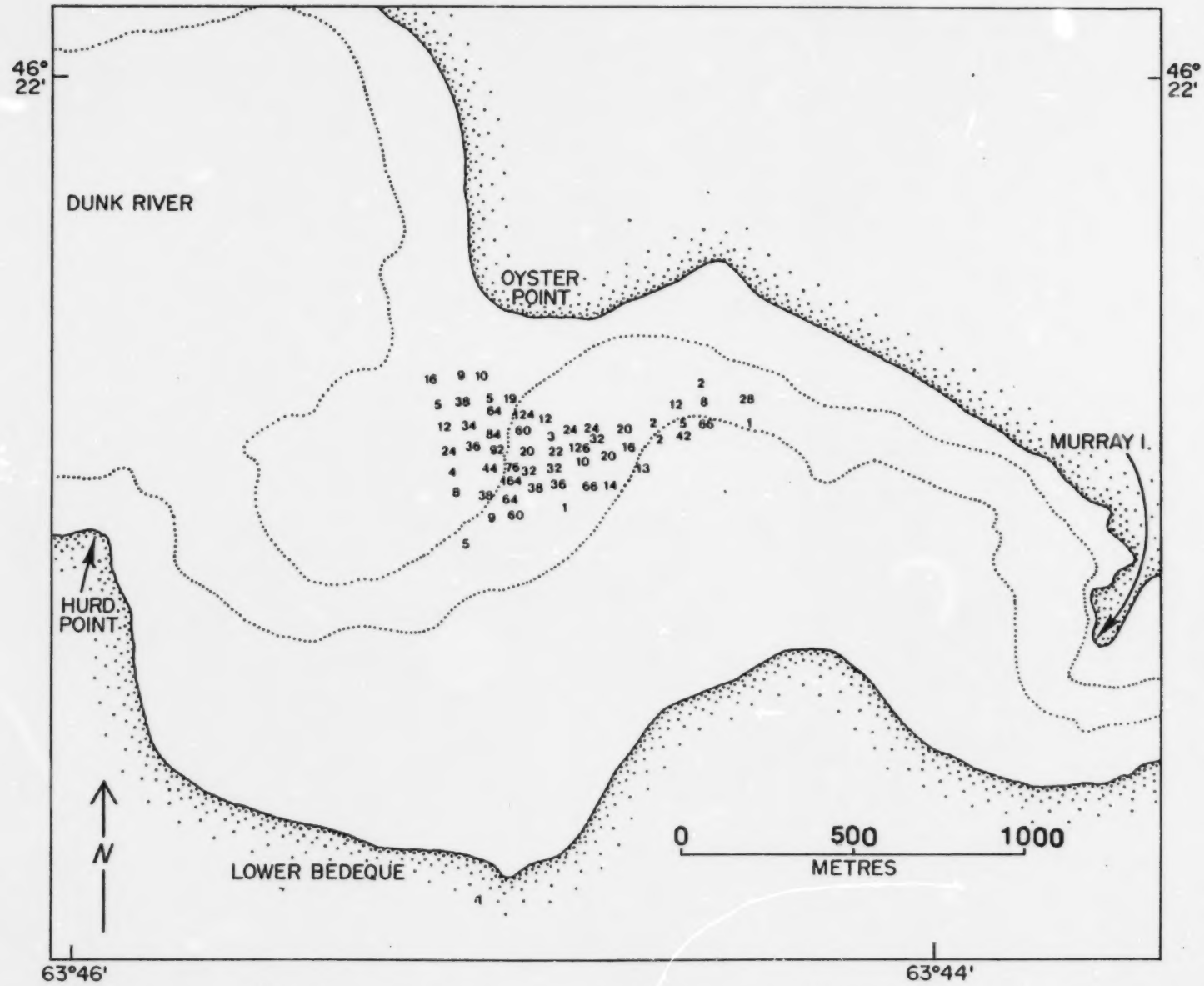


Figure 4a. Density m^{-2} of 1 yr old oysters (≤ 2.5 cm) collected at each station.

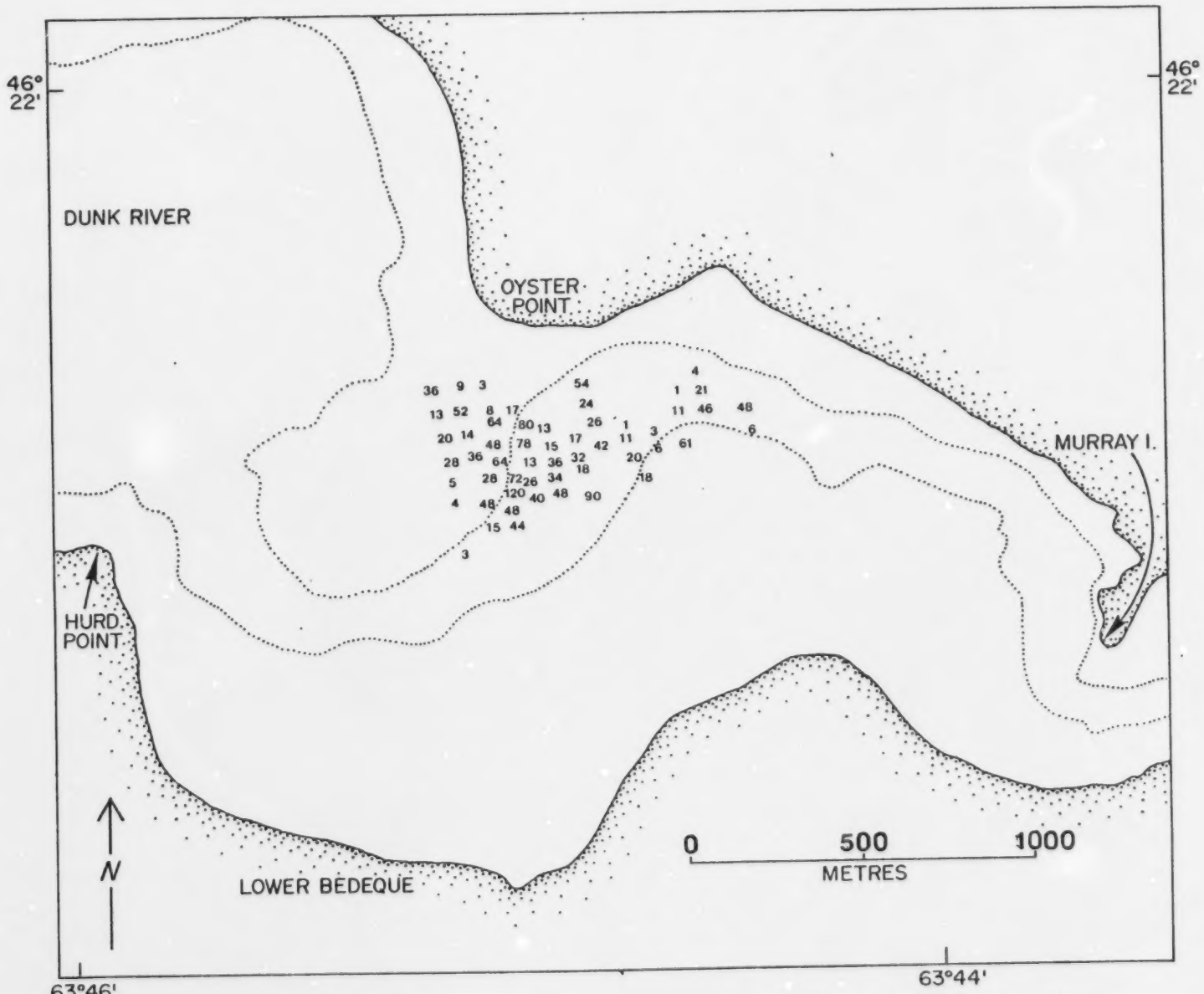


Figure 4b. Density m^{-2} of 2 yr old oysters (2.6 to 4.5 cm) collected at each station.

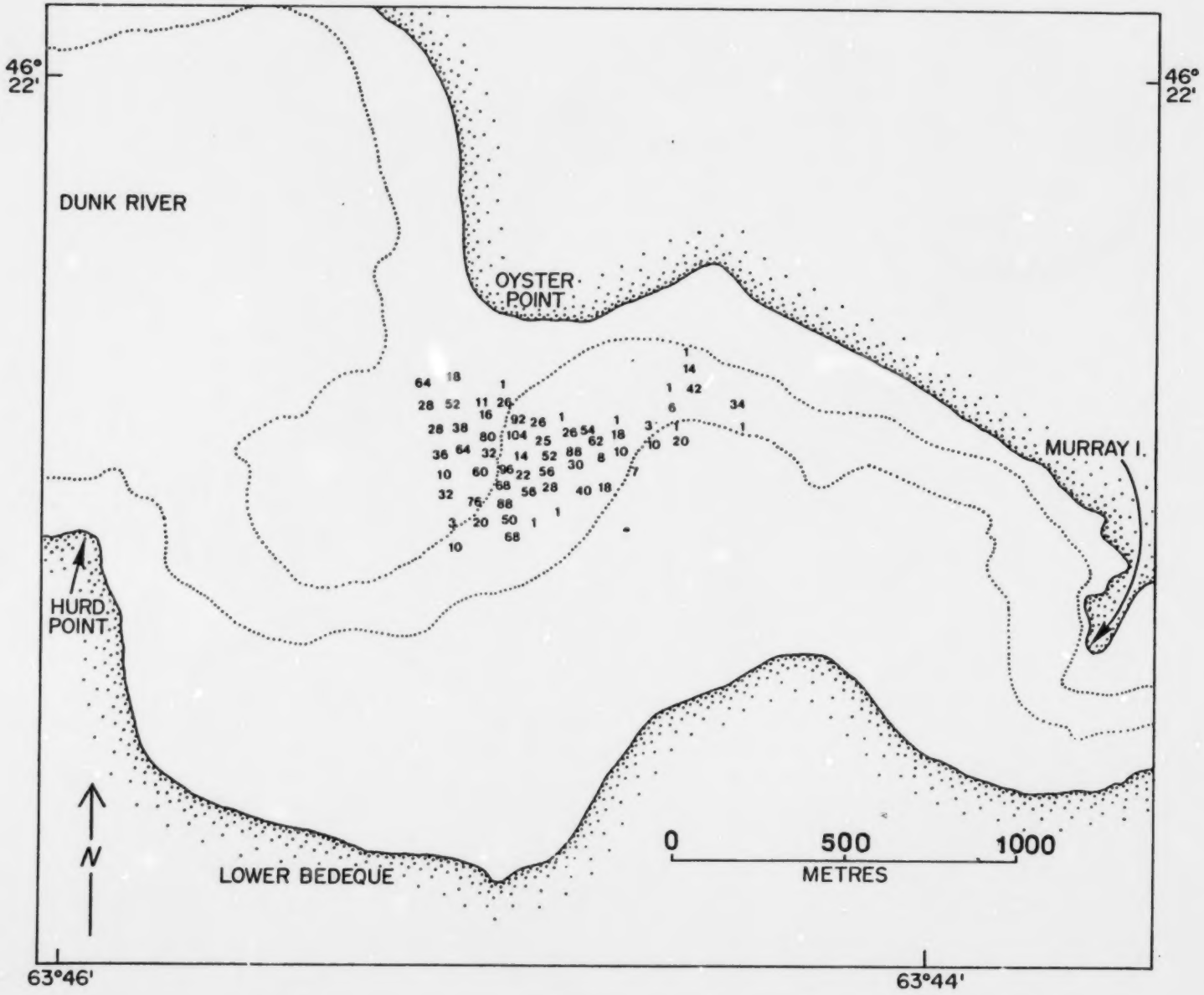


Figure 4c. Density m^{-2} of 3 yr old oysters (4.6 to 6.5) collected at each station.

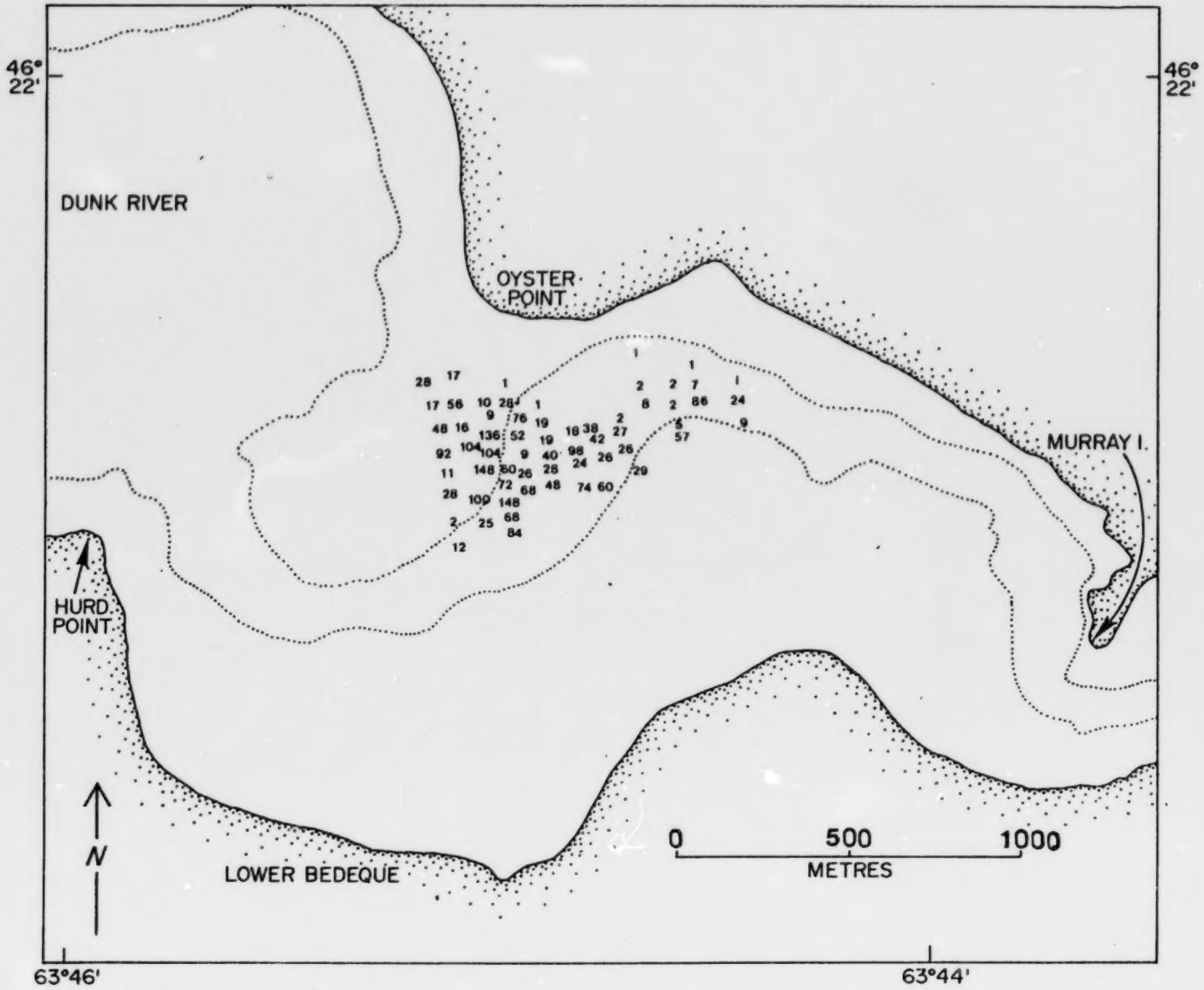


Figure 4d. Density m^{-2} of 4+ yr old oysters (>6.5 cm) collected at each station.

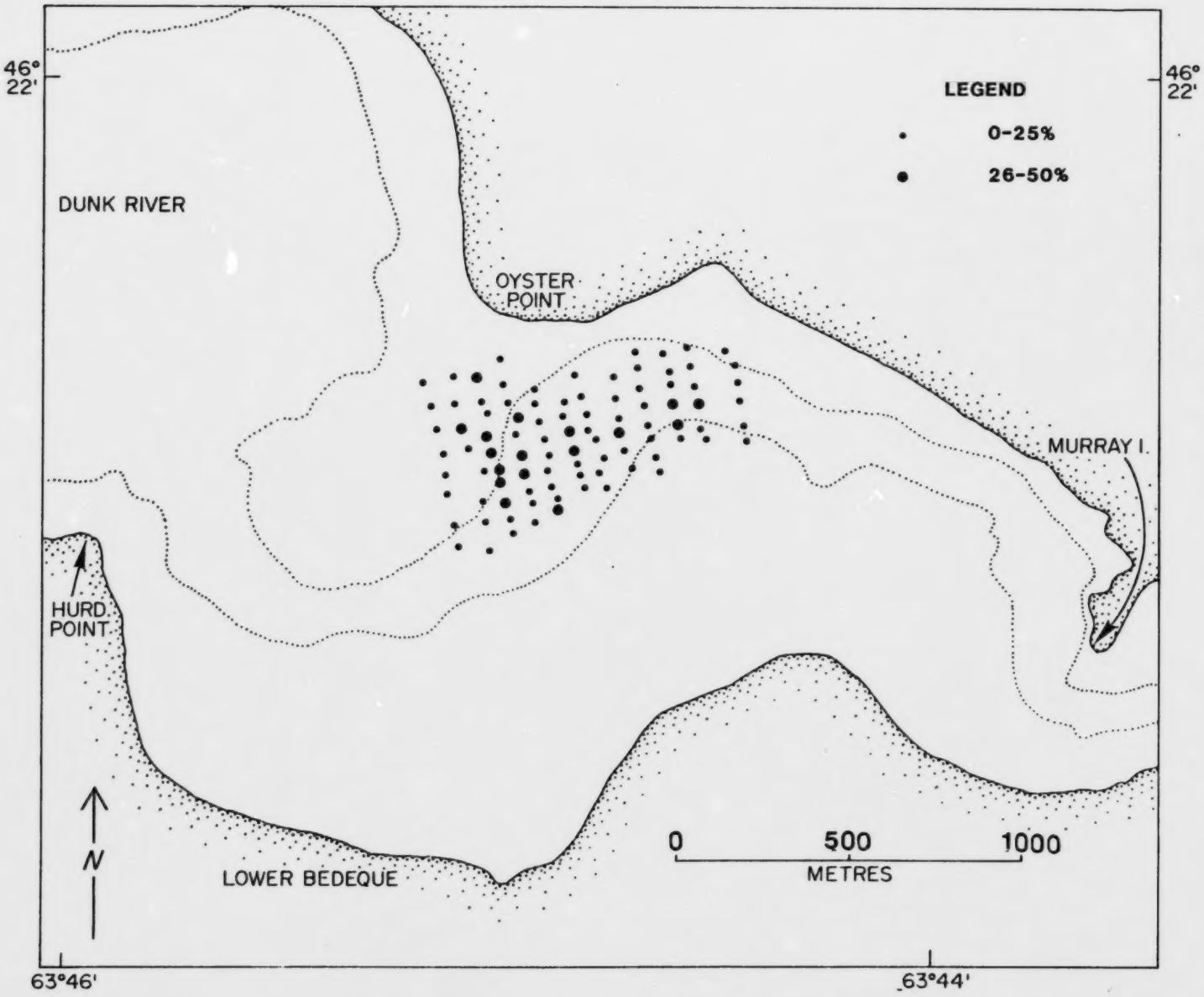


Figure 5a. Percentage of 1 yr old oysters (≤2.5 cm) collected at each station.

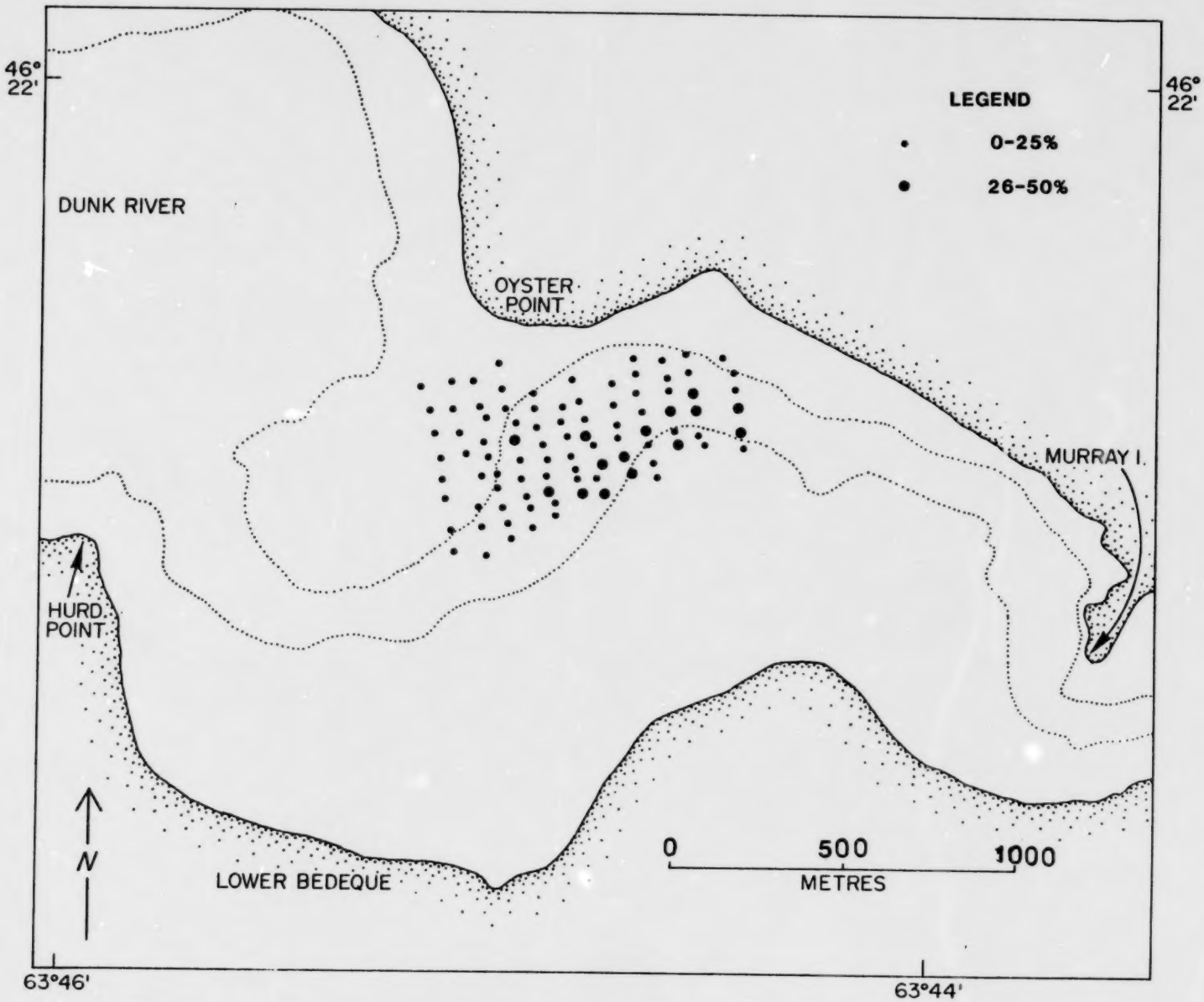


Figure 5b. Percentage of 2 yr old oysters (2.6 to 4.5 cm) collected at each station.

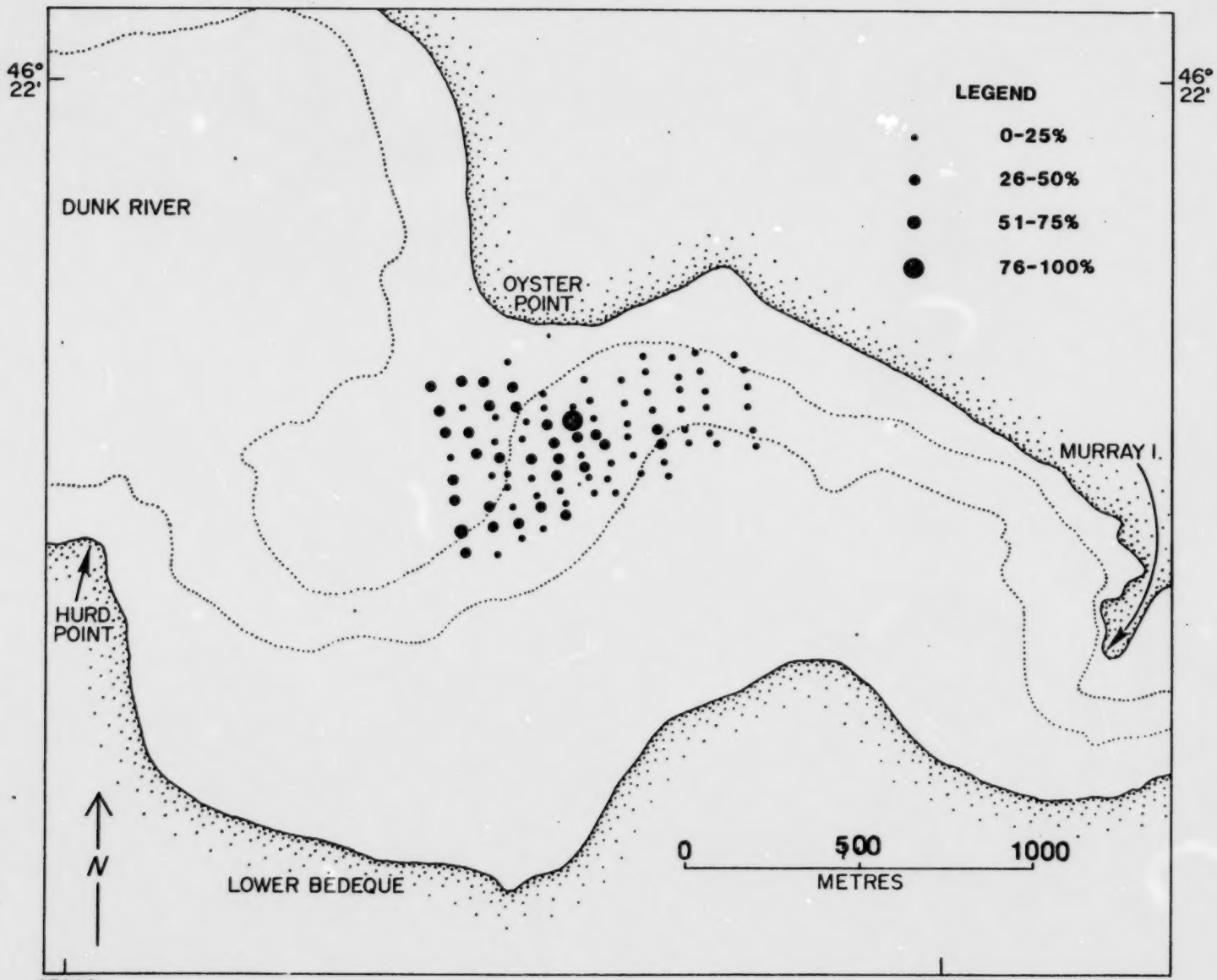


Figure 5c. Percentage of 3 yr old oysters (4.6 to 6.5 cm) collected at each station.

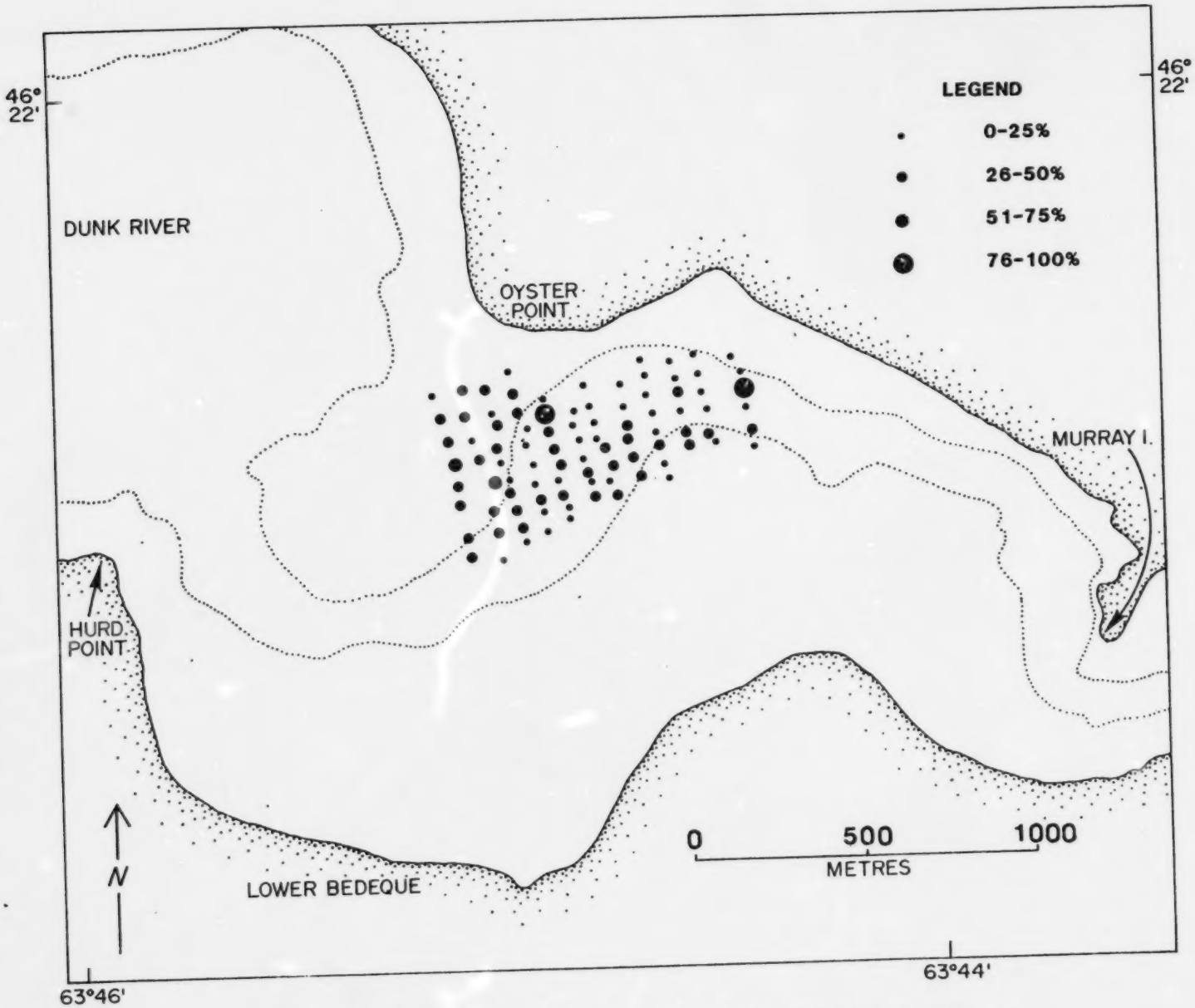


Figure 5d. Percentage of 4+ yr old oysters (>6.5 cm) collected at each station.

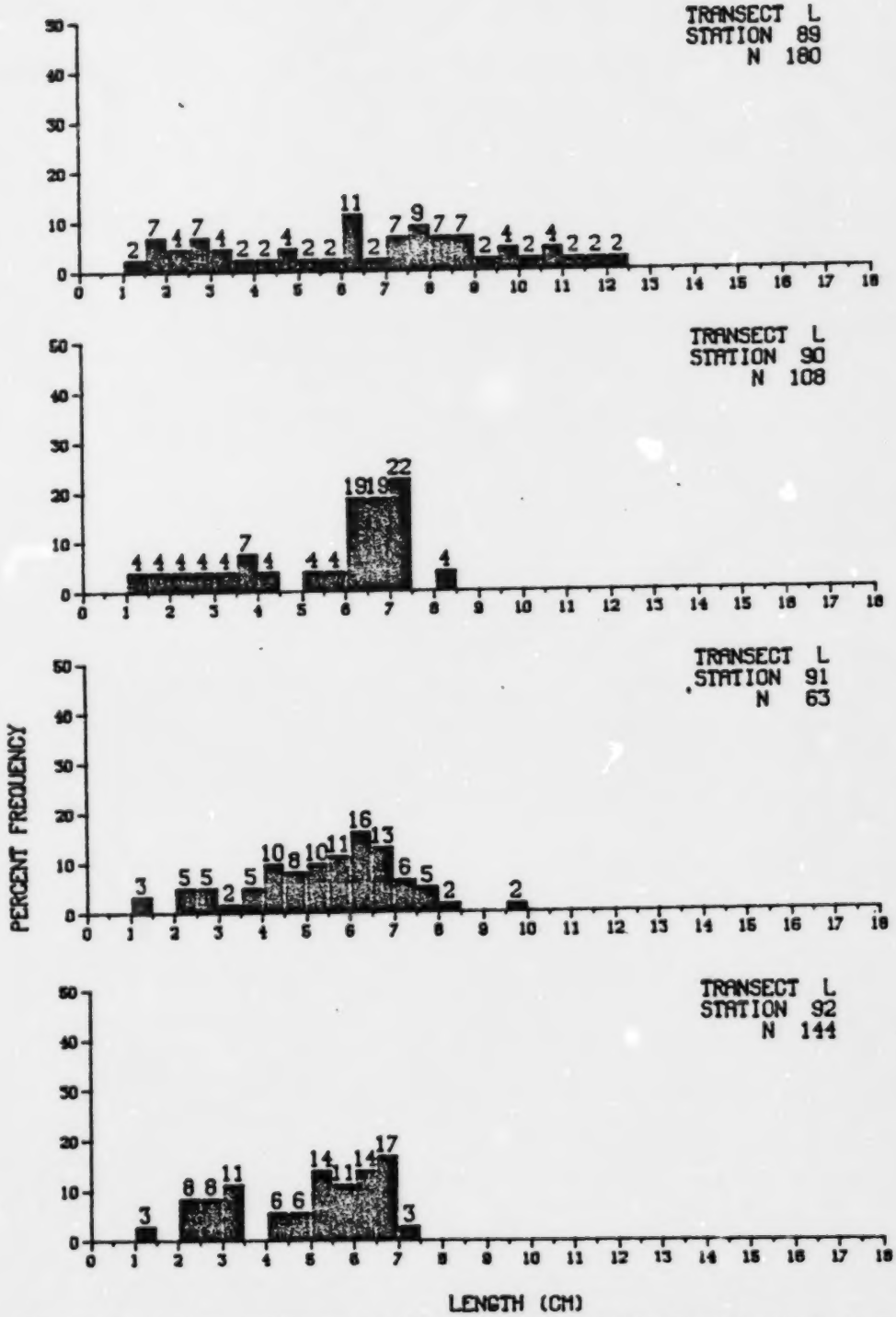
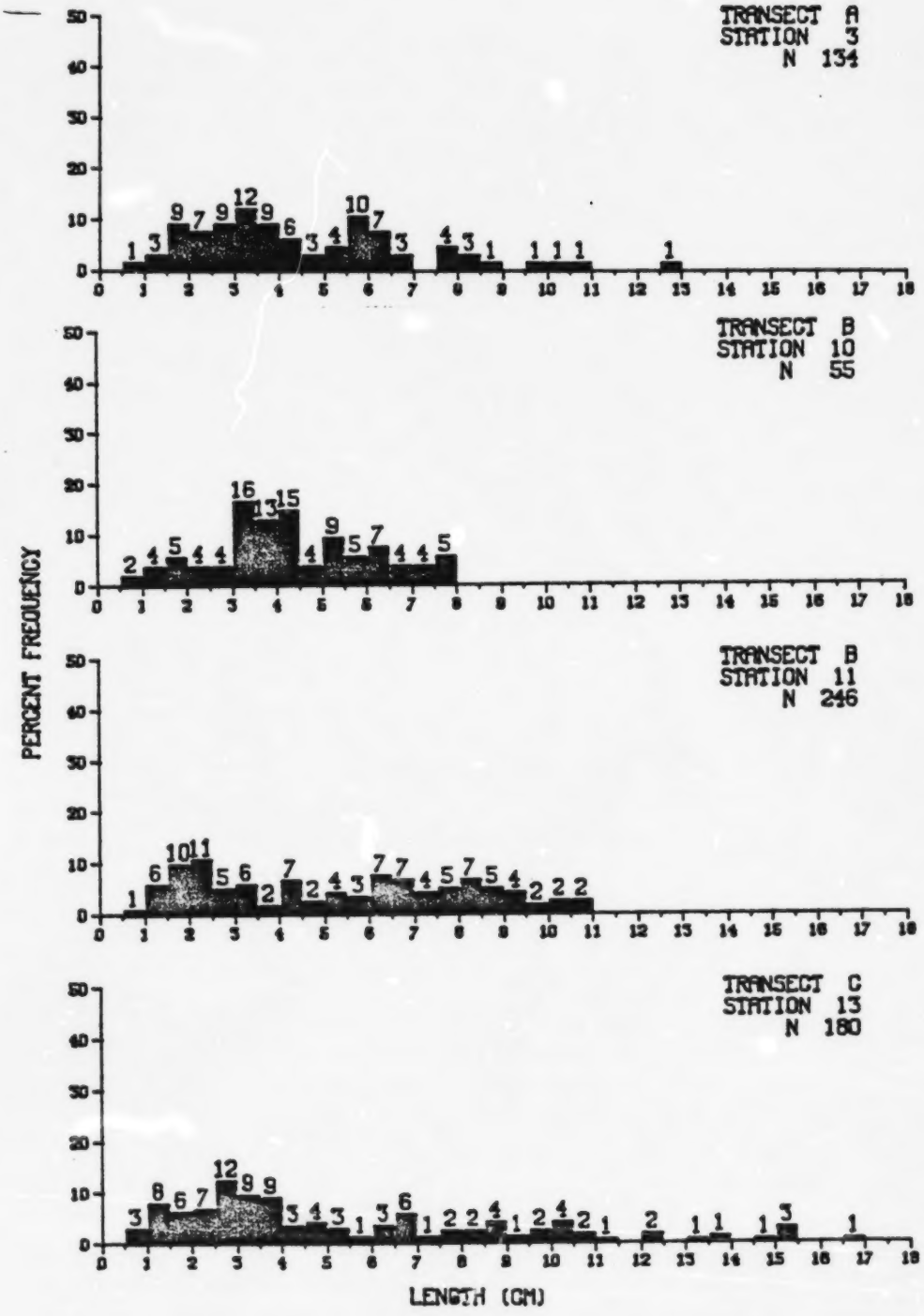


Figure 6. Size frequency distribution of oysters collected at each station in 1976: 1 yr olds <2.5 cm in length, 2 yr olds 2.6-4.5 cm, 3 yr olds 4.6-6.5 cm and 4,+ yr olds >6.5 cm.



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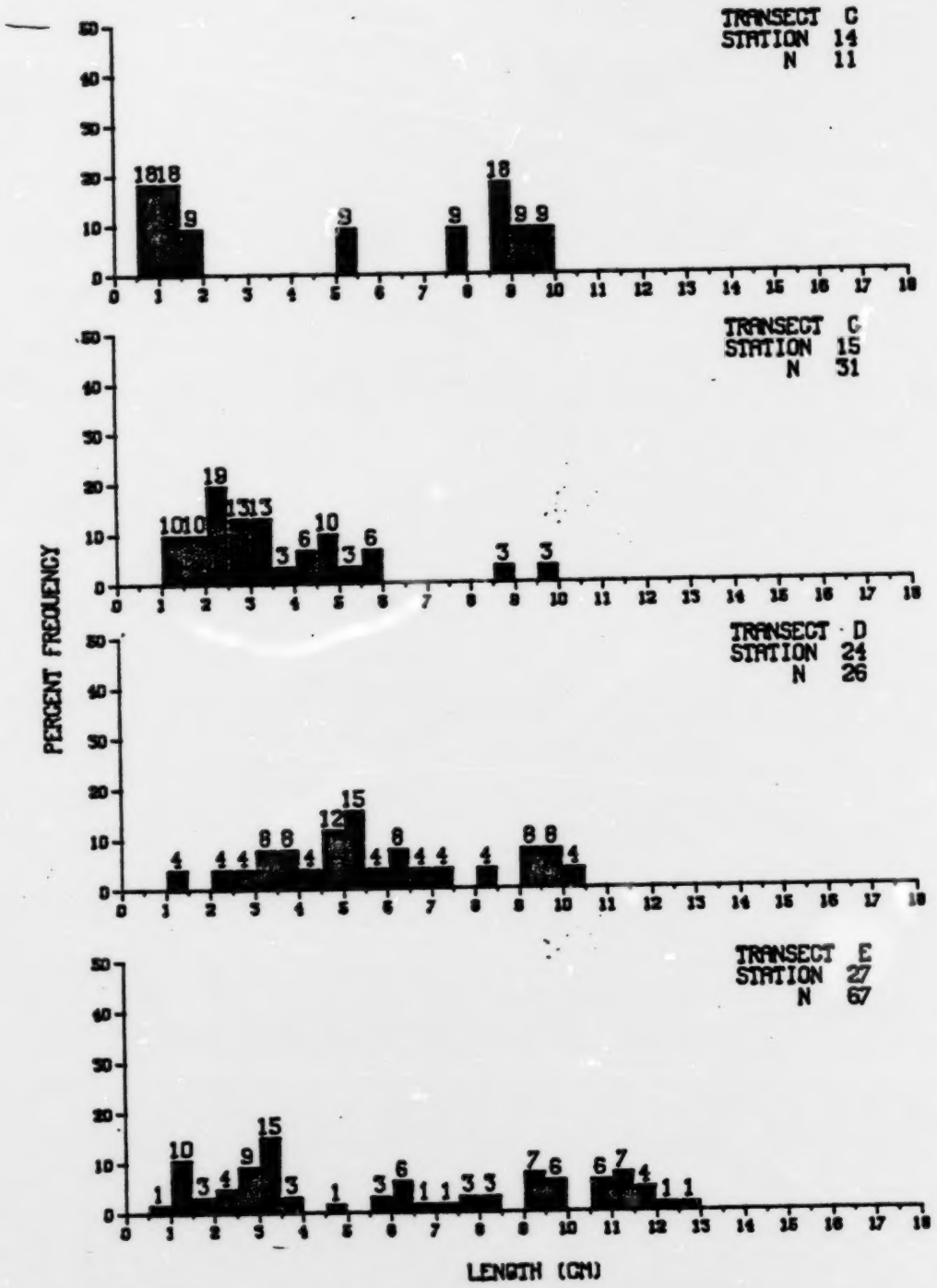

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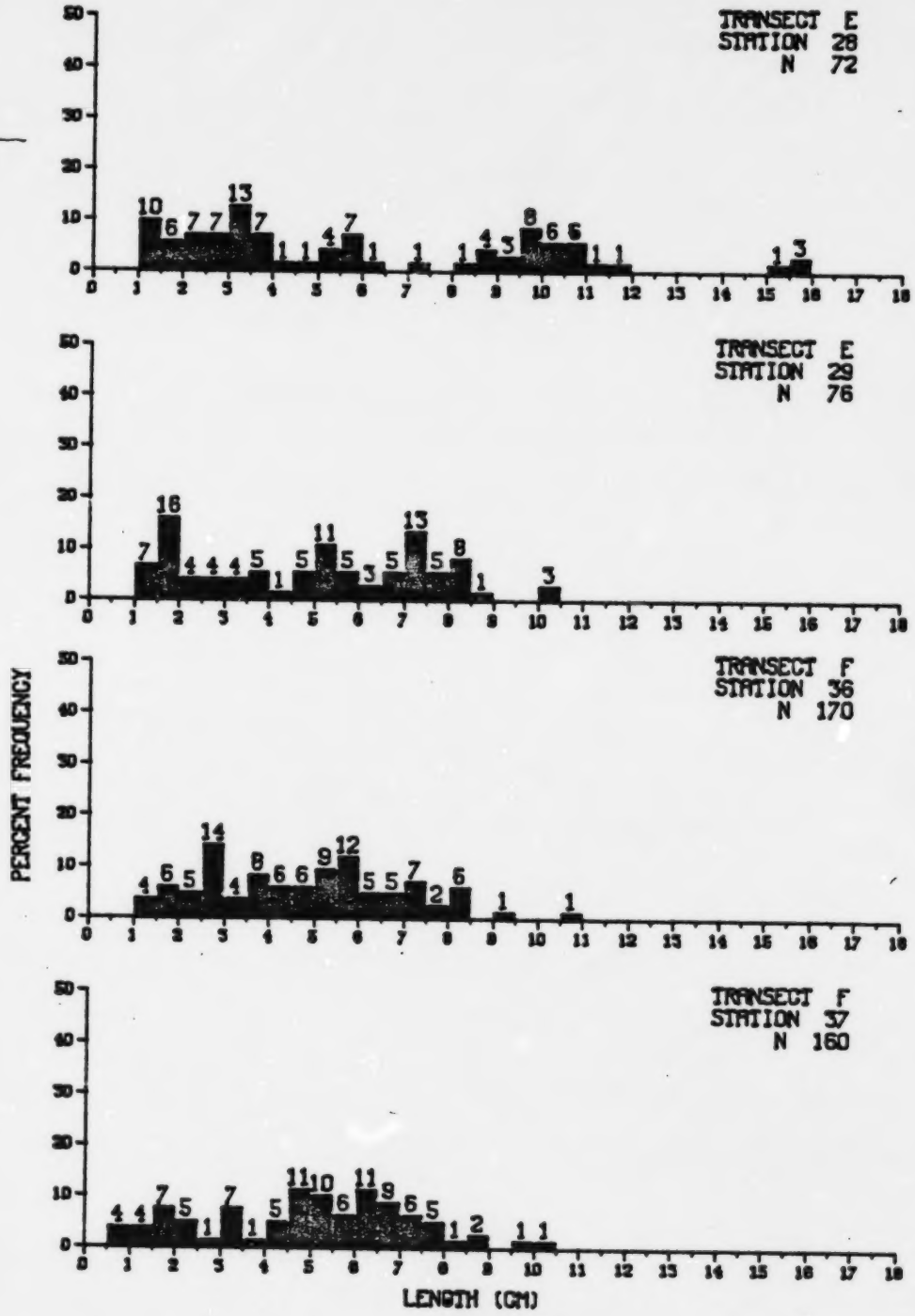

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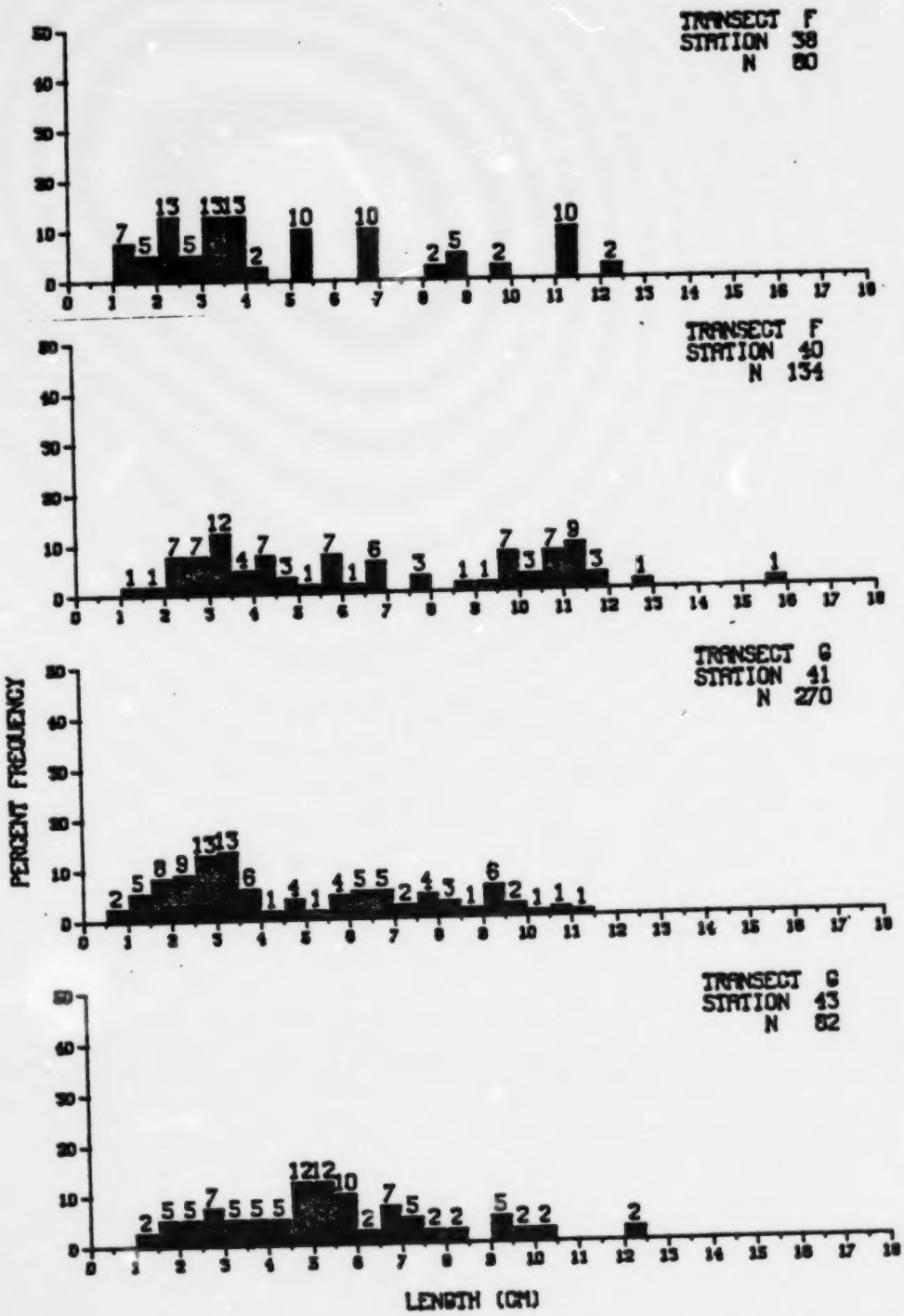

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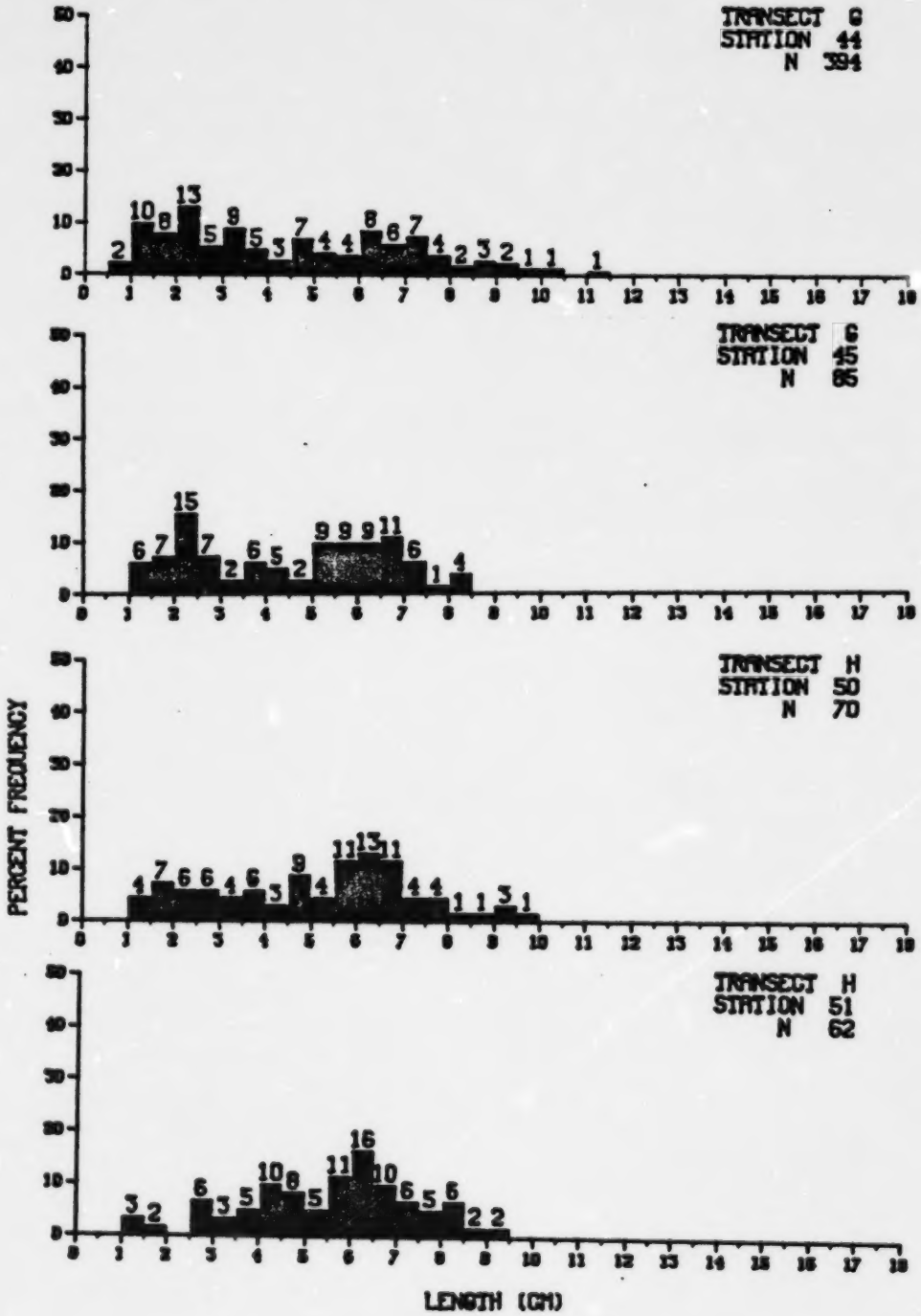

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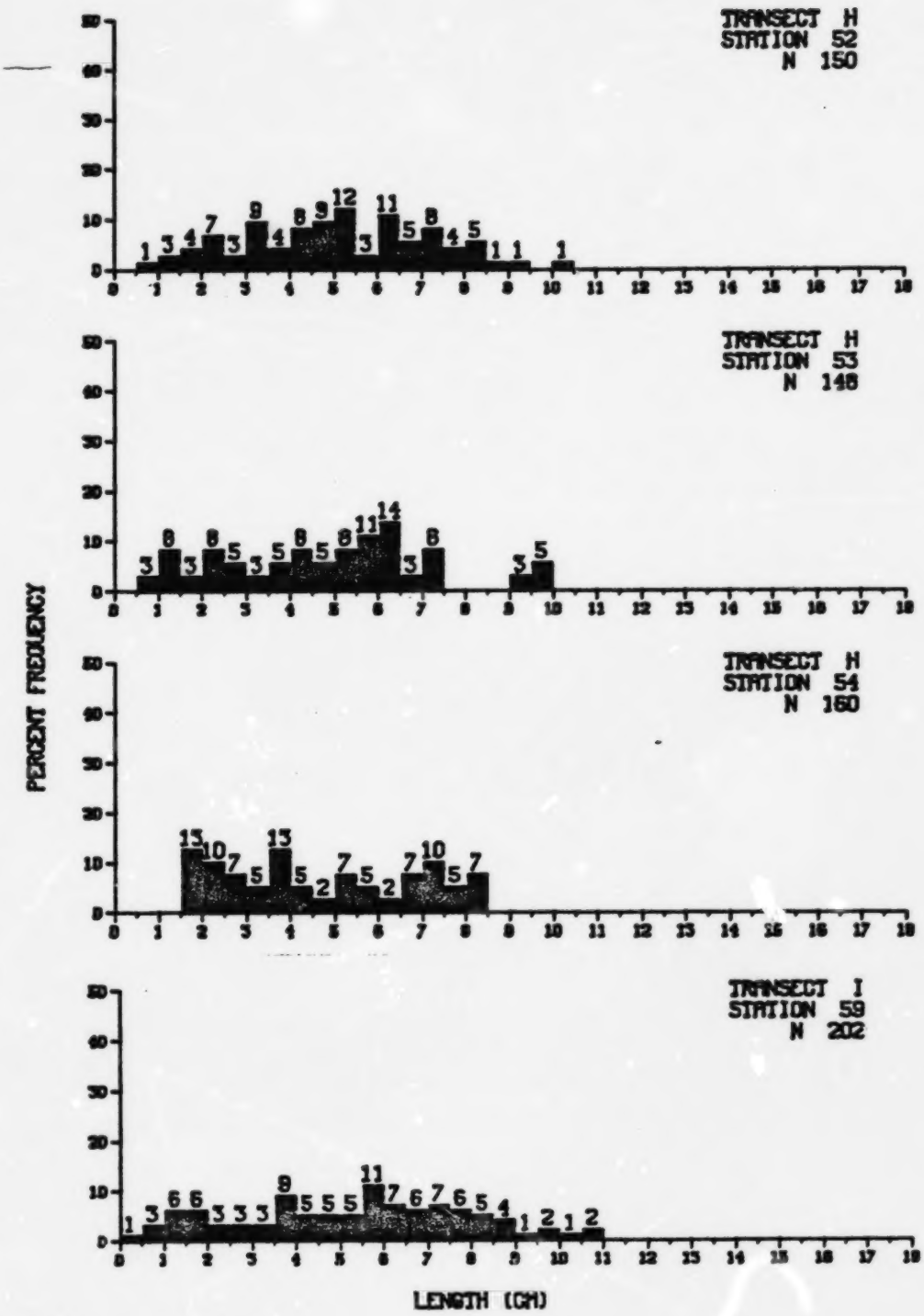

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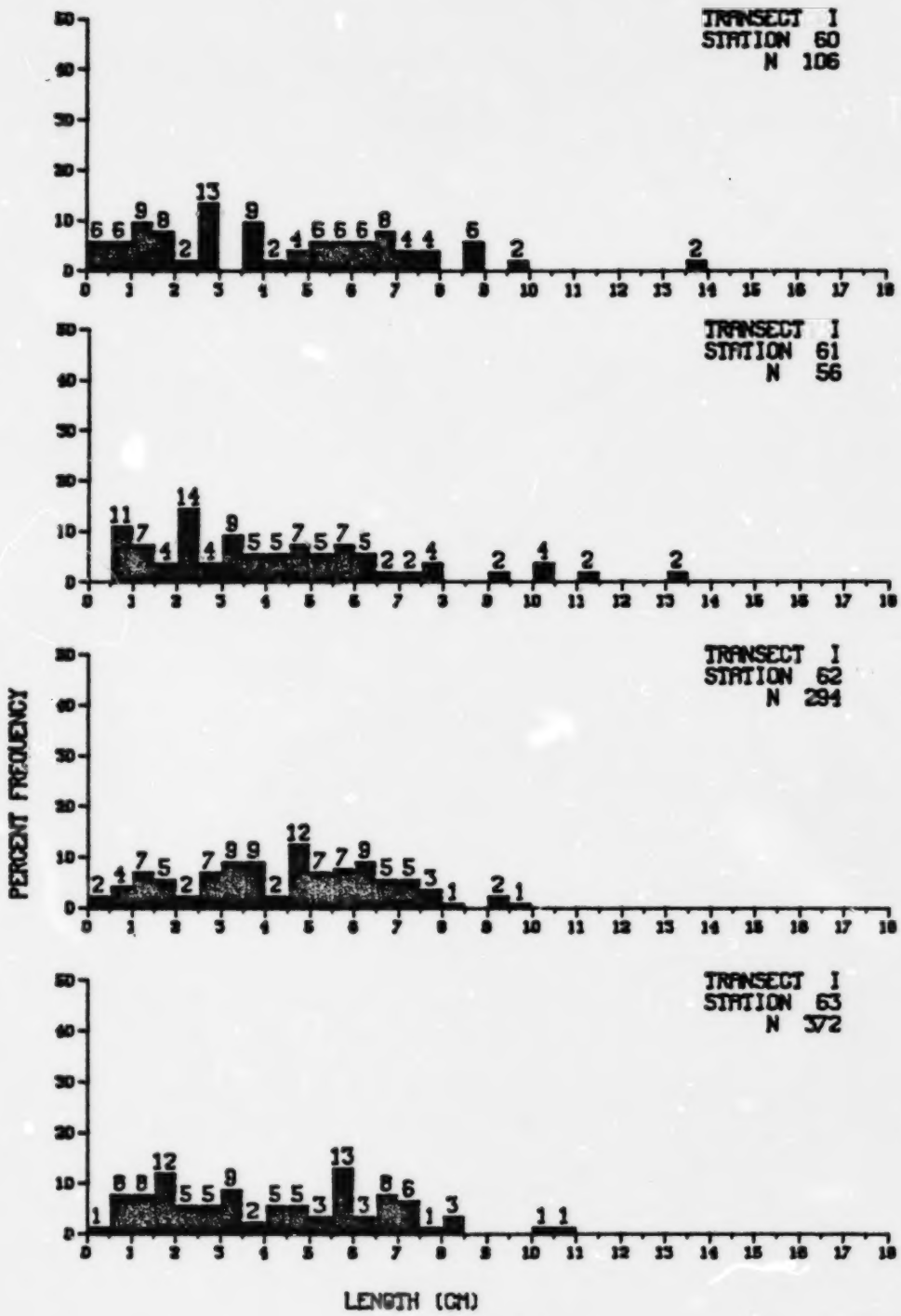

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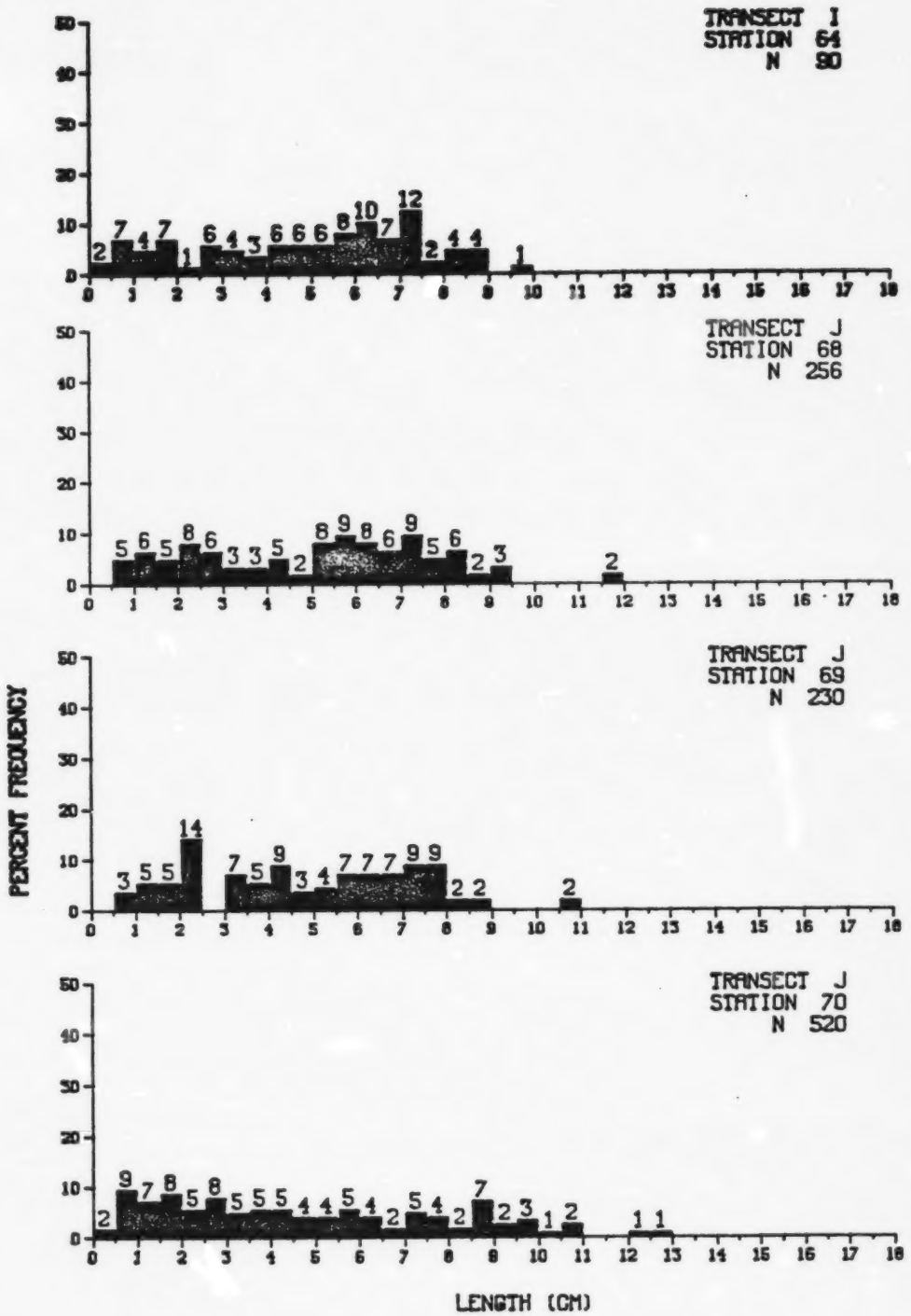

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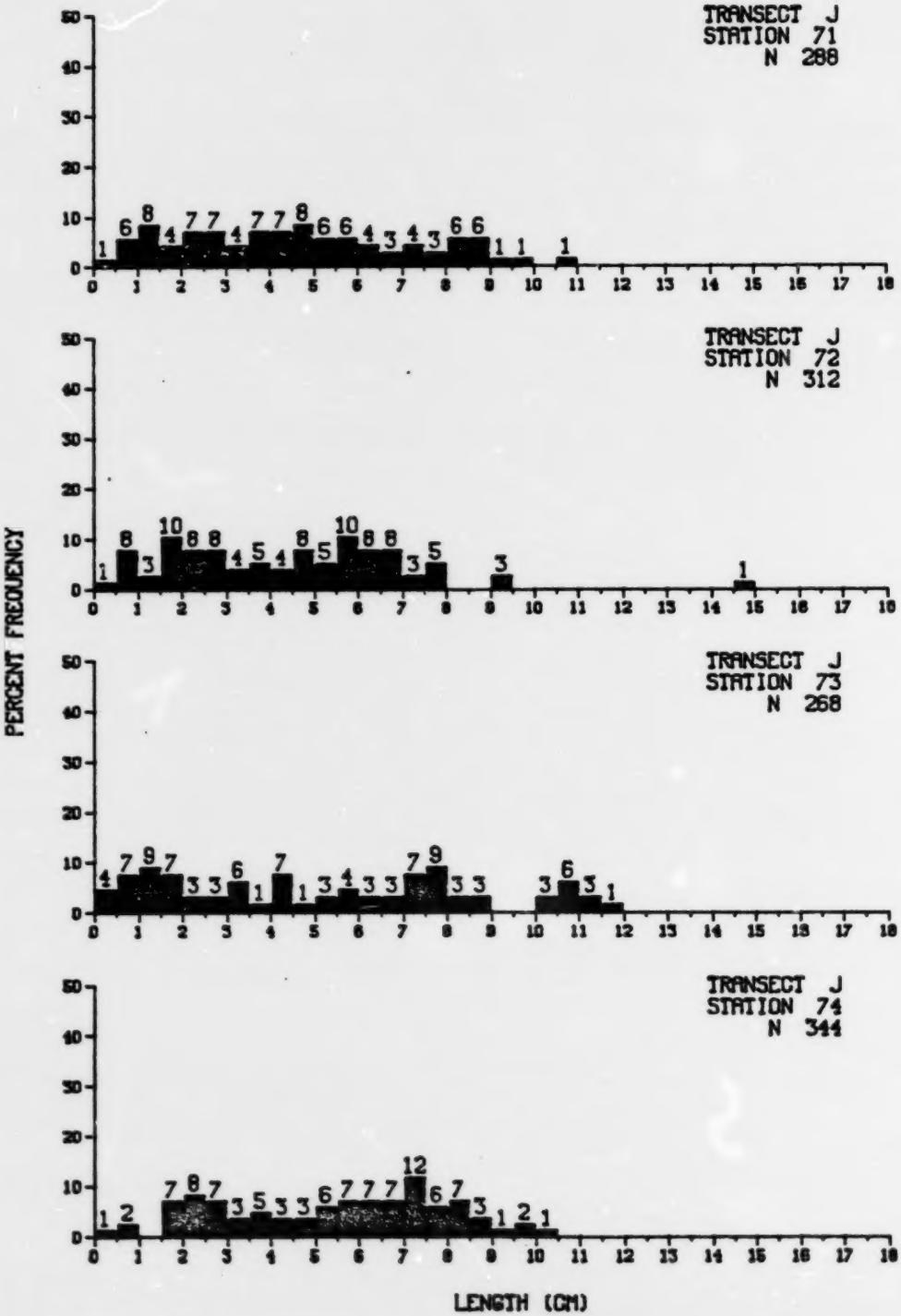

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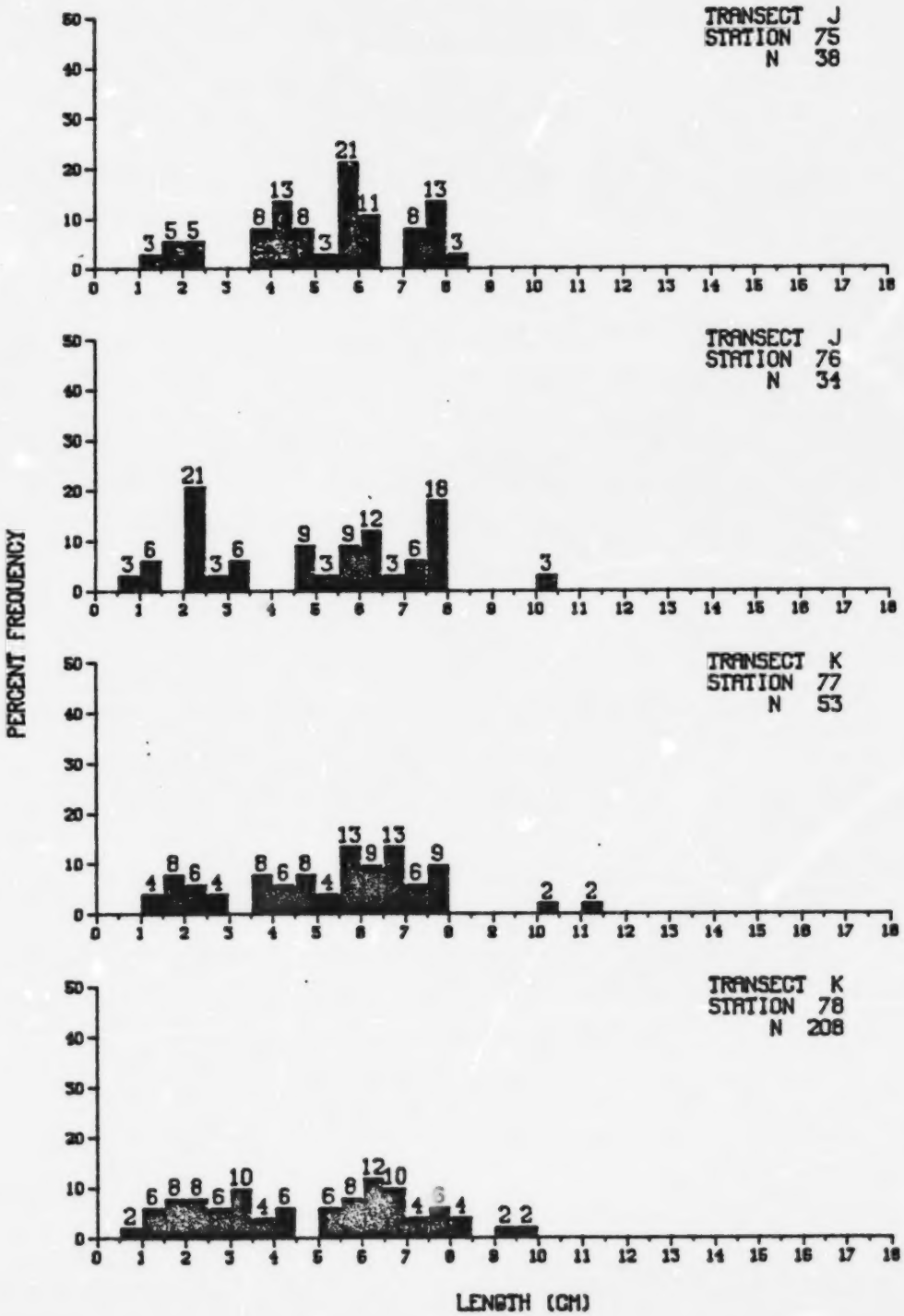

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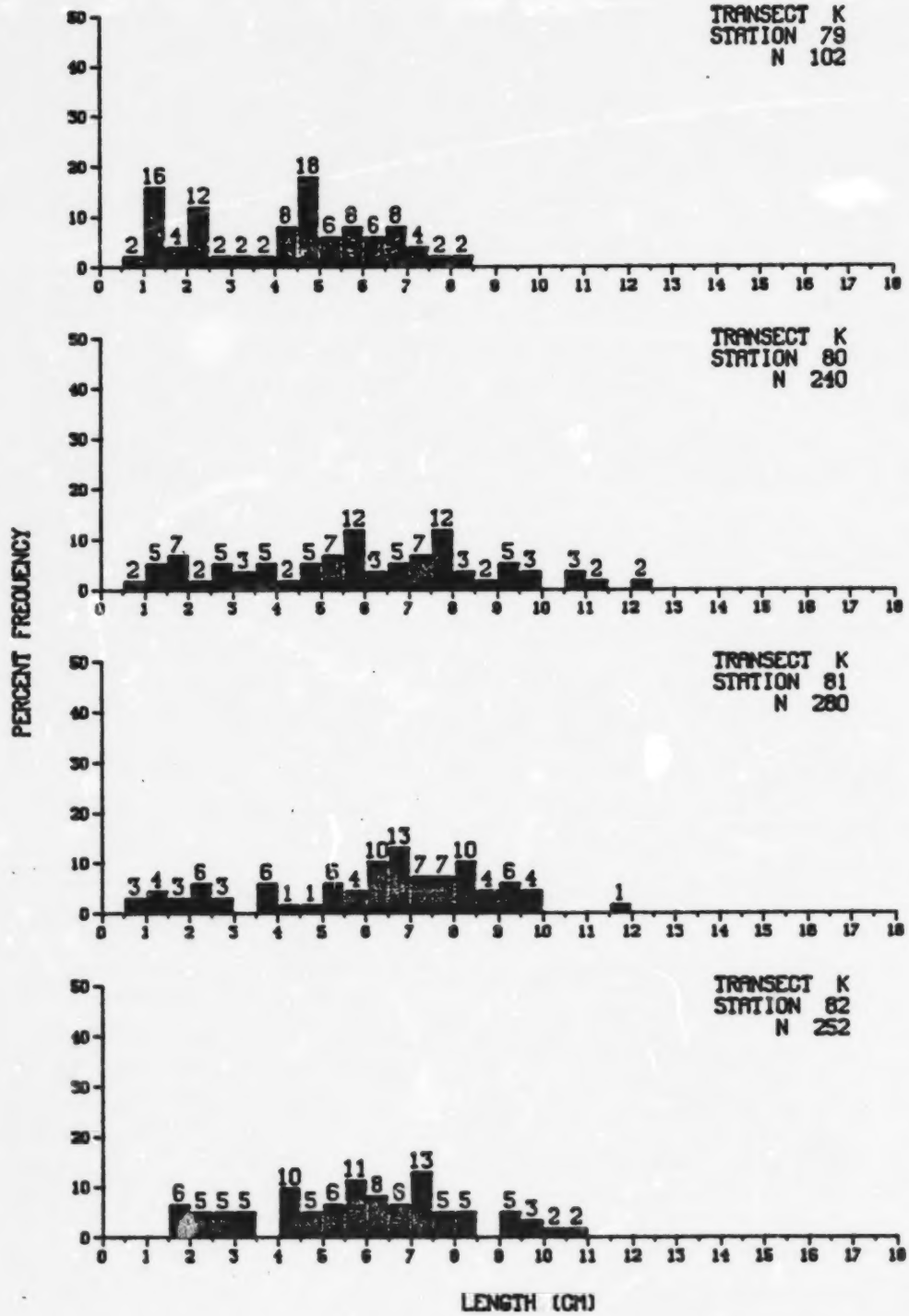

Figure 6. Cont'd.

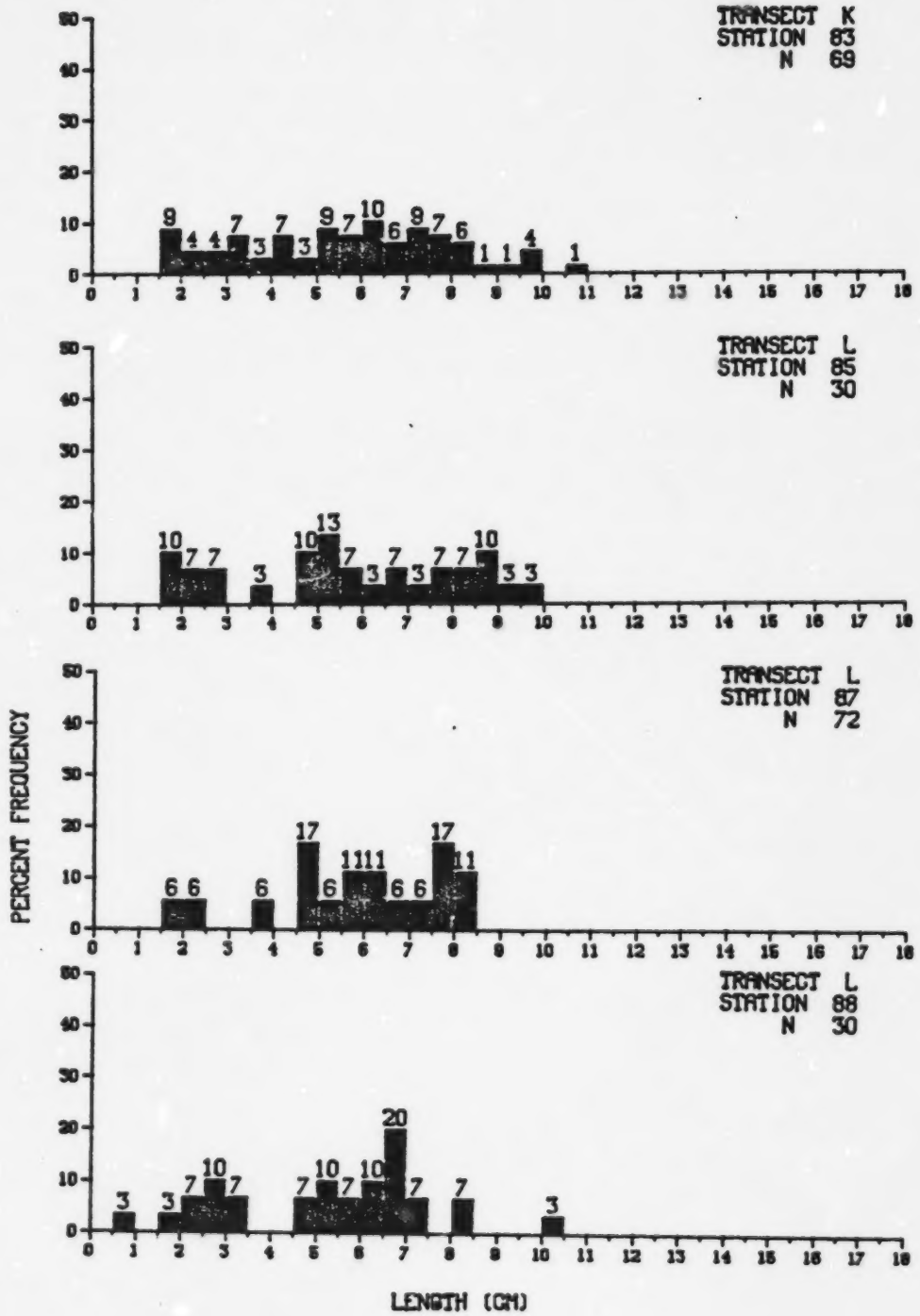

Figure 6. Cont'd.

TOTAL N - 8161.0

SIZE (CM)	FREQ. %	SIZE (CM)	FREQ. %
0.5	0.64	8.5	1.84
1.0	3.17	10.0	1.76
1.5	5.26	10.5	0.81
2.0	6.63	11.0	1.25
2.5	6.76	11.5	0.60
3.0	6.08	12.0	0.29
3.5	6.04	12.5	0.26
4.0	5.04	13.0	0.12
4.5	4.84	13.5	0.02
5.0	5.16	14.0	0.05
5.5	5.62	14.5	0.00
6.0	7.23	15.0	0.06
6.5	7.08	15.5	0.07
7.0	6.31	16.0	0.05
7.5	6.20	16.5	0.00
8.0	4.64	17.0	0.01
8.5	3.54	17.5	0.00
9.0	2.35	18.0	0.00

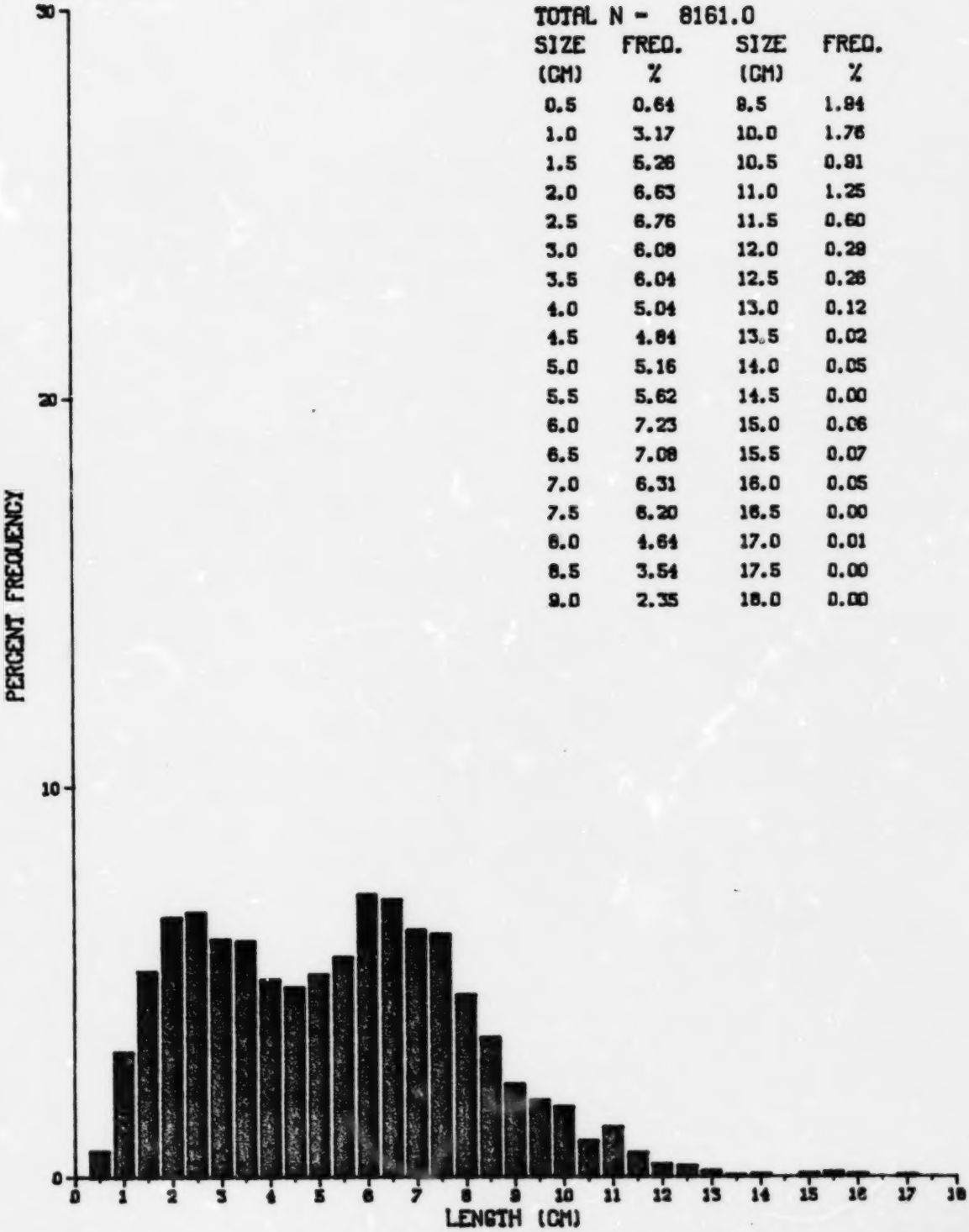

Figure 7. Size frequency distribution of oysters collected over all stations in 1976: 1 yr olds ≤2.5 cm, 3 yr olds 4.6-6.5 cm and 4,+ yr olds >6.5 cm.

Appendix. Composition, by weight, of material collected at each station.

Transect Line: A Station No.: 1 - No catch.

Transect Line: A Station No.: 2

Wet Weight of Shell and Live Invertebrates:	3.23 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	2.67 kg
Wet Weight of Oysters:	0.41 kg
Wet Weight of Other Invertebrates: (mussels).....	0.15 kg

Transect Line: A Station No.: 3

Wet Weight of Shell and Live Invertebrates:	3.44 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	1.41 kg
Wet Weight of Oysters:	1.99 kg
Wet Weight of Other Invertebrates:	0.04 kg

Transect Line: A Station No.: 4

Wet Weight of Shell and Live Invertebrates:	0.06 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0 kg
Wet Weight of Oysters:	0.06 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: A Station No.: 5 - No catch.

Transect Line: A Station No.: 6 - No catch.

Transect Line: B Station No.: 7 - No catch.

Transect Line: B Station No.: 8 - No catch.

Transect Line: B Station No.: 9

Wet Weight of Shell and Live Invertebrates:	0.63 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.51 kg
Wet Weight of Oysters:	0.12 kg
Wet Weight of Other Invertebrates:	0 kg

...Cont'd.

Appendix. Cont'd.

Transect Line: B Station No.: 10

Wet Weight of Shell and Live Invertebrates:	1.59	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.93	kg
Wet Weight of Oysters:	0.66	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: B Station No.: 11

Wet Weight of Shell and Live Invertebrates:	5.30	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	2.59	kg
Wet Weight of Oysters:	2.71	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: B Station No.: 12 - No catch.

Transect Line: C Station No.: 13

Wet Weight of Shell and Live Invertebrates:	3.69	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	1.27	kg
Wet Weight of Oysters:	2.42	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: C Station No.: 14

Wet Weight of Shell and Live Invertebrates:	0.45	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.12	kg
Wet Weight of Oysters:	0.33	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: C Station No.: 15

Wet Weight of Shell and Live Invertebrates:	0.62	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.29	kg
Wet Weight of Oysters:	0.33	kg
Wet Weight of Other Invertebrates:	0	kg

...Cont'd.

Appendix. Cont'd.

Transect Line: C Station No.: 16

Wet Weight of Shell and Live Invertebrates:	0.27 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.12 kg
Wet Weight of Oysters:	0.15 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: C Station No.: 17 - No catch.

Transect Line: C Station No.: 18 - No catch.

Transect Line: D Station No.: 19 - No catch.

Transect Line: D Station No.: 20 - No catch.

Transect Line: D Station No.: 21

Wet Weight of Shell and Live Invertebrates:	0.05 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.01 kg
Wet Weight of Oysters:	0.04 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: D Station No.: 22

Wet Weight of Shell and Live Invertebrates:	0.86 kg
Wet Weight of Oyster and Shell:	0 kg
Wet Weight of Other Shell:	0.60 kg
Wet Weight of Oysters:	0 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: D Station No.: 23 - No catch.

Transect Line: D Station No.: 24

Wet Weight of Shell and Live Invertebrates:	0.89 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.24 kg
Wet Weight of Oysters:	0.65 kg
Wet Weight of Other Invertebrates:	0 kg

...Cont'd.

Appendix. Cont'd.

Transect Line: D Station No.: 25

Wet Weight of Shell and Live Invertebrates:	0.68	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.68	kg
Wet Weight of Oysters:	0	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: D Station No.: 26 - No catch.

Transect Line: E Station No.: 27

Wet Weight of Shell and Live Invertebrates:	1.78	kg
Wet Weight of Oyster and Shell:	0	kg
Wet Weight of Other Shell:	0.57	kg
Wet Weight of Oysters:	1.21	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: E Station No.: 28

Wet Weight of Shell and Live Invertebrates:	2.39	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.90	kg
Wet Weight of Oysters:	1.41	kg
Wet Weight of Other Invertebrates: (mussels)	0.08	kg

Transect Line: E Station No.: 29

Wet Weight of Shell and Live Invertebrates:	2.34	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.90	kg
Wet Weight of Oysters:	1.44	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: E Station No.: 30

Wet Weight of Shell and Live Invertebrates:	0.28	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.10	kg
Wet Weight of Oysters:	0.18	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: E Station No.: 31 - No catch.

Transect Line: E Station No.: 32 - No catch.

...Cont'd.

Appendix. Cont'd.

Transect Line: F Station No.: 33 - No catch.

Transect Line: F Station No.: 34 - No catch.

Transect Line: F Station No.: 35 - No catch.

Transect Line: F Station No.: 36

Wet Weight of Shell and Live Invertebrates:	5.83 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	2.84 kg
Wet Weight of Oysters:	2.84 kg
Wet Weight of Other Invertebrates: (mussels)	0.15 kg

Transect Line: F Station No.: 37

Wet Weight of Shell and Live Invertebrates:	7.87 kg
Wet Weight of Oyster and Shell:	0 kg
Wet Weight of Other Shell:	3.51 kg
Wet Weight of Oysters:	4.01 kg
Wet Weight of Other Invertebrates: (mussels).....	0.35 kg

Transect Line: F Station No.: 38

Wet Weight of Shell and Live Invertebrates:	2.85 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	1.84 kg
Wet Weight of Oysters:	0.94 kg
Wet Weight of Other Invertebrates: (mussels)	0.07 kg

Transect Line: F Station No.: 39

Wet Weight of Shell and Live Invertebrates:	0.20 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.20 kg
Wet Weight of Oysters:	0 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: F Station No.: 40

Wet Weight of Shell and Live Invertebrates:	5.66 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	3.57 kg
Wet Weight of Oysters:	2.09 kg
Wet Weight of Other Invertebrates:	0 kg

...Cont'd.

Appendix. Cont'd.

Transect Line: G Station No.: 41

Wet Weight of Shell and Live Invertebrates:	7.93 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	3.94 kg
Wet Weight of Oysters:	3.84 kg
Wet Weight of Other Invertebrates: (mussels).....	0.15 kg

Transect Line: G Station No.: 42 - No catch.

Transect Line: G Station No.: 43

Wet Weight of Shell and Live Invertebrates:	8.16 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	6.15 kg
Wet Weight of Oysters:	1.46 kg
Wet Weight of Other Invertebrates: (mussels).....	0.55 kg

Transect Line: G Station No.: 44

Wet Weight of Shell and Live Invertebrates:	13.73 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	7.14 kg
Wet Weight of Oysters:	4.50 kg
Wet Weight of Other Invertebrates: (mussels)	2.09 kg

Transect Line: G Station No.: 45

Wet Weight of Shell and Live Invertebrates:	3.06 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	1.60 kg
Wet Weight of Oysters:	1.46 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: G Station No.: 46

Wet Weight of Shell and Live Invertebrates:.....	0.07 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.04 kg
Wet Weight of Oysters:	0.03 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: G Station No.: 47 - No catch.

Transect Line: H Station No.: 48 - No catch.

...Cont'd.

Appendix. Cont'd.

Transect Line: H Station No.: 49

Wet Weight of Shell and Live Invertebrates:	0.07 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.01 kg
Wet Weight of Oysters:	1.06 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: H Station No.: 50

Wet Weight of Shell and Live Invertebrates:	2.04 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Otner Shell:	0.78 kg
Wet Weight of Oysters:	1.23 kg
Wet Weight of Other Invertebrates: (mussels).....	0.03 kg

Transect Line: H Station No.: 51

Wet Weight of Shell and Live Invertebrates:	2.86 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	1.48 kg
Wet Weight of Oysters:	1.32 kg
Wet Weight of Other Invertebrates: (mussels).....	0.06 kg

Transect Line: H Station No.: 52

Wet Weight of Shell and Live Invertebrates:	6.66 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	3.53 kg
Wet Weight of Oysters:	2.49 kg
Wet Weight of Other Invertebrates: (mussels).....	0.64 kg

Transect Line: H Station No.: 53

Wet Weight of Shell and Live Invertebrates:	14.09 kg
Wet Weight of Oyster and Shell:	0 kg
Wet Weight of Other Shell:	9.36 kg
Wet Weight of Oysters:	2.81 kg
Wet Weight of Other Invertebrates: (mussels).....	1.92 kg

Transect Line: H Station No.: 54

Wet Weight of Shell and Live Invertebrates:	9.40 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	4.82 kg
Wet Weight of Oysters:	2.54 kg
Wet Weight of Other Invertebrates: (mussels).....	2.04 kg

...Cont'd.

Appendix. Cont'd.

Transect Line: H Station No.: 55 - No catch.

Transect Line: H Station No.: 56

Wet Weight of Shell and Live Invertebrates:	N/A	kg
Wet Weight of Oyster Shell:	N/A	kg
Wet Weight of Other Shell:	N/A	kg
Wet Weight of Oysters:	N/A	kg
Wet Weight of Other Invertebrates:	N/A	kg

Transect Line: I Station No.: 57

Wet Weight of Shell and Live Invertebrates:	0.98	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.96	kg
Wet Weight of Oysters:	0.02	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: I Station No.: 58

Wet Weight of Shell and Live Invertebrates:	0.39	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.39	kg
Wet Weight of Oysters:	0	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: I Station No.: 59

Wet Weight of Shell and Live Invertebrates:	8.80	kg
Wet Weight of Oyster and Shell:	0	kg
Wet Weight of Other Shell:	4.04	kg
Wet Weight of Oysters:	3.60	kg
Wet Weight of Other Invertebrates: (mussels)	1.16	kg

Transect Line: I Station No.: 60

Wet Weight of Shell and Live Invertebrates:	4.97	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	2.71	kg
Wet Weight of Oysters:	1.58	kg
Wet Weight of Other Invertebrates: (mussels)	0.68	kg

...Cont'd.

Appendix. Cont'd.

Transect Line: I Station No.: 61

Wet Weight of Shell and Live Invertebrates:	3.63 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	2.52 kg
Wet Weight of Oysters:	0.79 kg
Wet Weight of Other Invertebrates: (mussels)	0.32 kg

Transect Line: I Station No.: 62

Wet Weight of Shell and Live Invertebrates:	8.18 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	2.68 kg
Wet Weight of Oysters:	4.84 kg
Wet Weight of Other Invertebrates: (mussels)	0.66 kg

Transect Line: I Station No.: 63

Wet Weight of Shell and Live Invertebrates:	17.36 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	9.37 kg
Wet Weight of Oysters:	6.50 kg
Wet Weight of Other Invertebrates: (mussels)	1.49 kg

Transect Line: I Station No.: 64

Wet Weight of Shell and Live Invertebrates:	2.80 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.62 kg
Wet Weight of Oysters:	2.18 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: I Station No.: 65

Wet Weight of Shell and Live Invertebrates:	0.12 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0 kg
Wet Weight of Oysters:	0.12 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: I Station No.: 66 - No catch.

Transect Line: J Station No.: 67 - No catch.

...Cont'd.

Appendix. Cont'd.

Transect Line: J Station No.: 68

Wet Weight of Shell and Live Invertebrates:	10.21 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	3.80 kg
Wet Weight of Oysters:	5.74 kg
Wet Weight of Other Invertebrates: (mussels)	0.67 kg

Transect Line: J Station No.: 69

Wet Weight of Shell and Live Invertebrates:	7.98 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	3.05 kg
Wet Weight of Oysters:	4.67 kg
Wet Weight of Other Invertebrates: (mussels)	0.26 kg

Transect Line: J Station No.: 70

Wet Weight of Shell and Live Invertebrates:	17.19 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	6.38 kg
Wet Weight of Oysters:	7.71 kg
Wet Weight of Other Invertebrates: (mussels)	3.10 kg

Transect Line: J Station No.: 71

Wet Weight of Shell and Live Invertebrates:	8.34 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	2.98 kg
Wet Weight of Oysters:	4.32 kg
Wet Weight of Other Invertebrates: (mussels)	1.04 kg

Transect Line: J Station No.: 72

Wet Weight of Shell and Live Invertebrates:	15.73 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	5.81 kg
Wet Weight of Oysters:	5.28 kg
Wet Weight of Other Invertebrates: (mussels)	4.64 kg

Transect Line: J Station No.: 73

Wet Weight of Shell and Live Invertebrates:	14.41 kg
Wet Weight of Oyster and Shell:	0 kg
Wet Weight of Other Shell:	2.88 kg
Wet Weight of Oysters:	8.08 kg
Wet Weight of Other Invertebrates: (mussels).....	3.45 kg

...Cont'd.

Appendix. Cont'd.

Transect Line: J Station No.: 74

Wet Weight of Shell and Live Invertebrates:	15.57 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	4.56 kg
Wet Weight of Oysters:	8.36 kg
Wet Weight of Other Invertebrates: (mussels)	2.65 kg

Transect Line: J Station No.: 75

Wet Weight of Shell and Live Invertebrates:	2.19 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.68 kg
Wet Weight of Oysters:	1.51 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: J Station No.: 76

Wet Weight of Shell and Live Invertebrates:	0.98 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.22 kg
Wet Weight of Oysters:	0.76 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: K Station No.: 77

Wet Weight of Shell and Live Invertebrates:	2.07 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.72 kg
Wet Weight of Oysters:	1.35 kg
Wet Weight of Other Invertebrates:	0.10 kg

Transect Line: K Station No.: 78

Wet Weight of Shell and Live Invertebrates:	16.91 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	7.88 kg
Wet Weight of Oysters:	4.21 kg
Wet Weight of Other Invertebrates: (mussels)	4.82 kg

Transect Line: K Station No.: 79

Wet Weight of Shell and Live Invertebrates:	10.85 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	3.73 kg
Wet Weight of Oysters:	1.84 kg
Wet Weight of Other Invertebrates: (mussels)	5.28 kg

...Cont'd.

Appendix. Cont'd.

Transect Line: K Station No.: 80

Wet Weight of Shell and Live Invertebrates:	14.49	kg
Wet Weight of Oyster and Shell:	0	kg
Wet Weight of Other Shell:	4.75	kg
Wet Weight of Oysters:	6.26	kg
Wet Weight of Other Invertebrates: (mussels)	3.48	kg

Transect Line: K Station No.: 81

Wet Weight of Shell and Live Invertebrates:	10.00	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	2.84	kg
Wet Weight of Oysters:	7.13	kg
Wet Weight of Other Invertebrates: (mussels)	0.03	kg

Transect Line: K Station No.: 82

Wet Weight of Shell and Live Invertebrates:	8.72	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	2.29	kg
Wet Weight of Oysters:	6.28	kg
Wet Weight of Other Invertebrates: (mussels)	0.15	kg

Transect Line: K Station No.: 83

Wet Weight of Shell and Live Invertebrates:	3.31	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	1.53	kg
Wet Weight of Oysters:	1.78	kg
Wet Weight of Other Invertebrates:	0	kg

Transect Line: K Station No.: 84 - No catch.

Transect Line: L Station No.: 85

Wet Weight of Shell and Live Invertebrates:	1.25	kg
Wet Weight of Oyster Shell:	0	kg
Wet Weight of Other Shell:	0.43	kg
Wet Weight of Oysters:	0.81	kg
Wet Weight of Other Invertebrates: (mussels)	0.01	kg

...Cont'd.

Appendix. Cont'd.

Transect Line: L Station No.: 86

Wet Weight of Shell and Live Invertebrates:	0.33 kg
Wet Weight of Oyster and Shell:	0 kg
Wet Weight of Other Shell:	0.19 kg
Wet Weight of Oysters:	0.14 kg
Wet Weight of Other Invertebrates: (mussels)	0 kg

Transect Line: L Station No.: 87

Wet Weight of Shell and Live Invertebrates:	2.84 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	1.01 kg
Wet Weight of Oysters:	1.83 kg
Wet Weight of Other Invertebrates: (mussels)	0 kg

Transect Line: L Station No.: 88

Wet Weight of Shell and Live Invertebrates:	1.81 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	1.04 kg
Wet Weight of Oysters:	0.67 kg
Wet Weight of Other Invertebrates: (mussels)	0.11 kg

Transect Line: L Station No.: 89

Wet Weight of Shell and Live Invertebrates:	7.58 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	3.54 kg
Wet Weight of Oysters:	2.25 kg
Wet Weight of Other Invertebrates: (mussels)	1.79 kg

Transect Line: L Station No.: 90

Wet Weight of Shell and Live Invertebrates:	3.98 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	1.31 kg
Wet Weight of Oysters:	2.67 kg
Wet Weight of Other Invertebrates:	0 kg

Transect Line: L Station No.: 91

Wet Weight of Shell and Live Invertebrates:	2.46 kg
Wet Weight of Oyster Shell:	0 kg
Wet Weight of Other Shell:	0.84 kg
Wet Weight of Oysters:	1.62 kg
Wet Weight of Other Invertebrates:	0 kg

...Cont'd.

Appendix. Cont'd.

Transect Line: L Station No.: 92

Wet Weight of Shell and Live Invertebrates:	7.20	kg
Wet Weight of Oyster and Shell:	0	kg
Wet Weight of Other Shell:	4.36	kg
Wet Weight of Oysters:	2.84	kg
Wet Weight of Other Invertebrates:	0	kg